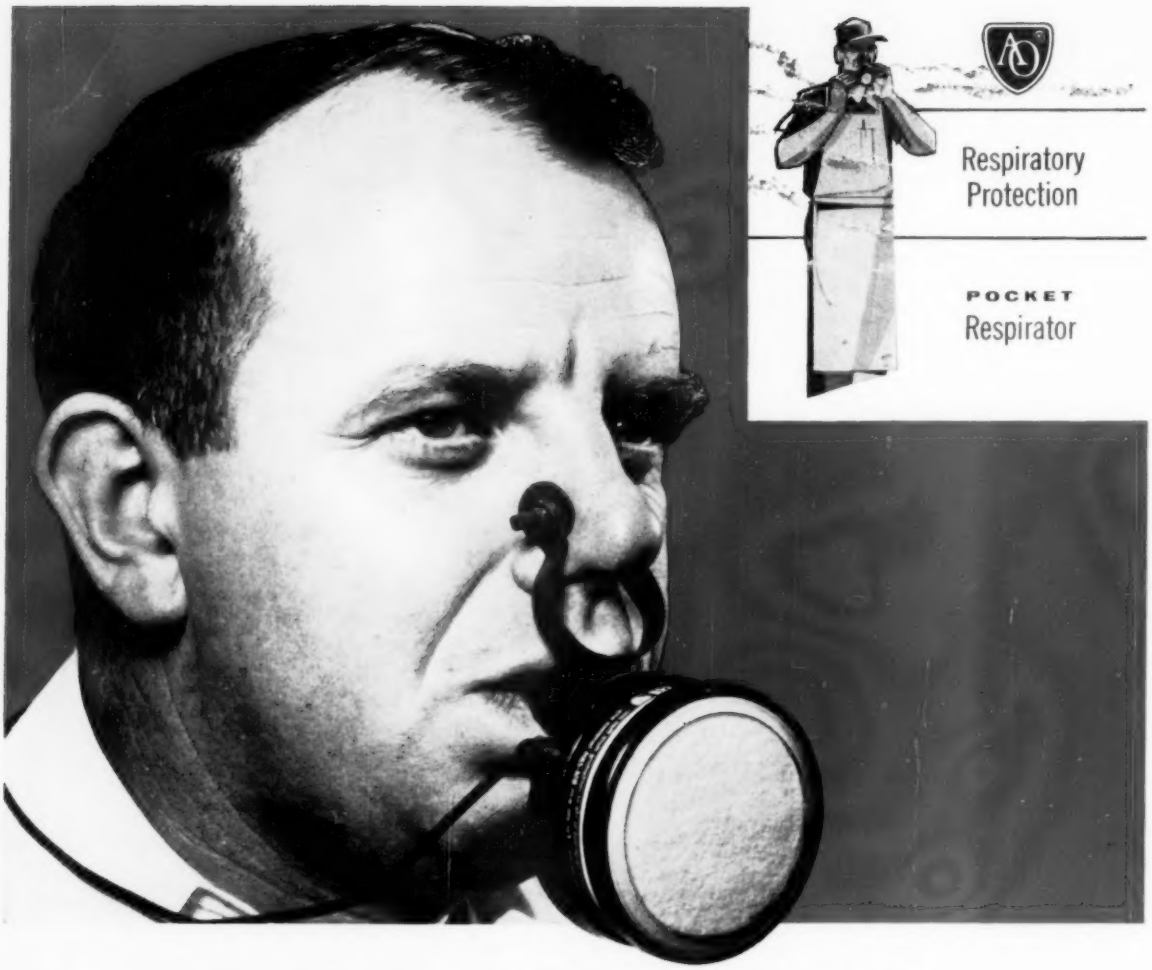
Safety Maintenance

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • AUGUST, 1958 • 50¢

Published By Alfred M. Best Company, Inc.



For Fast "On and Off" — or Continual Use

NEW AO POCKET RESPIRATOR

This recent addition to American Optical's full line of engineered respirators has proved very popular from the outset. It fills a real need! Workers stepping from non-hazardous to questionable or hazardous areas and vice versa can whip it on and off intermittently. Or it can be worn for extended periods. There are sixteen filter cartridges used in this respirator which protect against a variety of dusts, mists, fumes, vapors and gases. Your nearest AO Safety Products Representative can supply you.

QUICK FACTS

- LOW IN PRICE — EXCEPTIONAL IN PERFORMANCE.
- COMPACT — ONLY 3" x 3" x 2¼".
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- EASILY DISMANTLED — EASILY STERILIZED.
- REPLACEABLE PARTS AVAILABLE.
- 3 COMPANION MODELS.
- COMPLETE INHALATION AND EXHALATION VALVE SYSTEMS

Always insist on AO Trademarked Safety Products

American Optical COMPANY
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASS.
Branches in Principal Cities

1833-1958 • 125 LEADERSHIP YEARS

(For details, use Key # T-1 on card on page 1)

BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE. To obtain copies write in the key numbers on the free-postage card below.

MAINTENANCE

Storage Battery Racks 209
The Electric Storage Battery Co. A new 12 page illustrated catalog reviews steel racks used to store storage batteries. Maintenance and increased deliverable voltage are stressed as major benefits of this equipment. Tips are also included for rack selection.

Pavement Sealers 210
Maintenance, Inc. 4-page illustrated folder lists major causes of asphalt deterioration and offers products to prevent this. Application methods and a maintenance engineering service are outlined. The products are said to stop the destructive effects of gasoline and oil, seal out frost and halt the drying action of the sun.

How to Select a Floor Brush ... 211
Flour City Brush Co. Informative booklet describes the various kinds of bristles, hair and fibers used in the construction of floor and sanitary cleaning brushes. Aids are offered to help maintenance men select the right kind of brush for various applications.

Light Duty Marking Kit 212
M. E. Cunningham Co. Data sheet offers information concerning a new marking outfit. The outfit comprises a standard holder, special type fonts and a compartmented box. Information is given on holder sizes, type capacities, and type fonts for ease in ordering.

Parking Lot Planning 213
Harris Barrier, Inc. 32-page data book offers suggestions for designing parking lots for commercial, industrial and institutional use. Diagrams are used to illustrate space allocations, etc. A complete line of parking barriers is featured.

Scaffolding Equipment 214
The Patent Scaffolding Co., Inc. 12 page bulletin describes installation instructions, engineering data and the uses for tubular scaffolding. Units can be used in construction, maintenance and repair work. Brochure features photographs and technical drawings.

Electrical Equipment 215
Crouse-Hinds Co. Booklet outlines the manufacturing facilities and electrical equipment of the company. Conduit equipment, floodlights, aviation lighting equipment and traffic control are stressed. Installation photos show products at work.

Radioactive Waste Disposal Equipment 216
Nuclear Science and Engineering Corp. Brochure outlines the firm's consulting services to operators of nuclear power plants. Radiological safety as well as cost savings are analyzed. The disposal of liquid, solid and gaseous waste is discussed in relation to volume and harmful radioactivity. Included is an invaluable chart showing maximum permissible concentrations of radioactive materials in air and water.

Lubrication Equipment 217
Plews Oiler, Inc. Data sheets describe company's line of oilers, pumping units, fluid dispensers and spray cleaners, etc. All the equipment is made of rolled metal with steel valves and bronze springs. Equipment described can be used to lubricate and maintain motors, vehicles, and processing machines, etc.

Check Chart for Maintenance Painting 218
The Wilbur & Williams Co. Chart recommends procedures to be used in selecting the right paint for particular maintenance problems. Products recommended are based on new advances in paint which use resins as well as rubber and vinyl in combination. Chart should prove useful to maintenance engineers in the food processing, chemical and petroleum industries.

FIRE PROTECTION

Control Unit for Fire Alarm Systems 219
Notifier Corp. Brochure describes a new unit that can be used to monitor circuits, common equipment, bells, tripping devices, etc. Unit assures protection for Class "A" emergency signaling operations for proprietary, auxiliary, remote station or local systems. Illustrations and technical data on the new equipment are furnished.

Fire Extinguisher Cart 220
American-LaFrance-Foamite Corp. Data sheet illustrates and describes a new mobile unit to wheel extinguishers to scene of fire. The new cart is said to be especially useful at night in plants where it is necessary for one man, such as a night watchman, to fight fires.

PERSONAL PROTECTION

Chemical Splash and Welder's Goggles 221
Mine Safety Appliances Co. New bulletin describes new goggle line with frames of soft vinyl designed for better protection and broader vision. Goggles offer improved ventilation and can be worn over conventional glasses. Bulletin also describes replacement parts.

Protective Clothing Catalog 222
Wheeler Protective Apparel, Inc. Catalog describes a complete line of industrial cloth-

(Continued on the next page)

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READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.
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KEEPING UP WITH RECENT DEVELOPMENTS: Insert the key numbers shown on items in special feature article.

PLEASE PRINT YOUR NAME & ADDRESS

Name _____ Title _____

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City _____ Zone _____ State _____

August, 1958 Please send me the following free data

Free Bulletins (Cont'd)

ing which has been designed to offer protection against heat, abrasion and chemical hazards. It is arranged to be used as a safety handbook. Pictures and charts aid in developing and maintaining a safety program.

New Hat for Electrical Workers . 223
Jackson Products, Inc. Data sheet depicts a new plastic hat and cap that resists up to 20,000 volts of electricity. Optional features and replacement parts are described and all prices are given in convenient chart form.

Industrial Work Gloves 224
Riegel Textile Corp. Colorful new catalog describes a complete line of industrial gloves. Of special interest to safety directors should be a new service whereby safety slogans can be imprinted on the cuffs and backs of gloves. Wearer is provided a constant reminder to work carefully. 40 suggestions for slogans are also offered.

INDUSTRIAL HYGIENE

Disposable Salt Tablet Dispensers 225
United States Safety Service Co. Brochure depicts a new plastic disposable dispenser for impregnated salt tablets. Various types of salt tablets, packaging and ordering instructions are also described.

Odor Control 226
Hemeon Associates. Brochure reports on new developments in odor-metering apparatus and techniques. Facilities and problems are highlighted and equipment is illustrated.

Wet Type Dust Collector 227
Dust Suppression & Engineering Co. 12 page bulletin describes new unit that separates dust from the air by centrifugal impingement action against wetted surfaces without the use of sprays, etc. Does away with moving elements and water eliminators.

New Hand Cleaner 228
Lixoil Laboratories. Data sheet lists advantages to be obtained overcoming dermatitis through the use of a new hand cleaner. Cleaner can be used to remove paint, putty, graph ink, oils, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Reader's Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Athlete's Foot Control
124	Salt Tablets
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Throat Medication
131	Eye Wash Fountains
132	Hand Drying Facilities
133	Disinfectant—Deodorants
134	Hearing Testers
135	Hearing Protectors
136	Noise Analysis
137	Emergency Rescue Kits
	FIRE PROTECTION
141	Safety Cans
142	Fire Alarms
143	Safer Solvents
144	Degreasing Machines
145	Drum Safety Valve
147	Fire-Resistant Hydraulic Fluids
148	Watchmen's Control Systems
149	Extinguishing Ash Trays
	LIGHTING EQUIPMENT
150	Alarms & Warning Lights
153	Fluorescent Lamp Guards
154	Emergency Lights
	MAINTENANCE
160	Anti-Slip Floor & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Floor Cleaning Machines
164	Floor Resurfacing Materials
165	Paints
166	Industrial Wipers
167	Roof Coatings
	LADDERS & HANDLING
170	Ladders
171	Ladder Safety Devices
172	Scaffolds
173	Work Platforms
174	Sling & Rope Tester
175	Safety Hooks
176	Fork Truck Steering Aid
177	Plastic Acid-Containers
	GUARDS
178	Machine Guards
179	Power Press Feeders
180	Safety Tools
181	Vacuum Sheet Lifters
182	Valve Operators
183	Machine Tool Cutter Guard
	EDUCATIONAL AIDS
191	Safety Signs
192	Safety Awards & Emblems
193	Employee Safety Guide
194	Bulletin Boards

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75 FULTON STREET
NEW YORK 38, N. Y.

Service Dept.

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Safety Maintenance

formerly "SAFETY ENGINEERING"

Volume 116, Number 2 **August, 1958**

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Cover picture by courtesy of Owens-Illinois Glass Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

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it's SAFE to say

● DOUBLE-BARRELLED SAFETY

One of the factors contributing to the growth of large companies is their continuing emphasis on accident prevention effort. Too often the small plant will tolerate hazards and dangers on the premise that "we cannot afford safety activities and are too small to bother." Thus, those same small plants will ignore preventable accidents eating away their hard-earned profits.

A company with more than 33,000 employees knows that it is too big to "afford" the burden of accidents. Actually, any recurring losses could reach a staggering figure if they merely tolerated accidents as a necessary evil.

It is no mere coincidence, therefore, that two feature articles in this issue of SAFETY MAINTENANCE reflect the imaginative safety approach traveled by the same company.

In the "Safety Invaders" story the 33,000 man Owens-Illinois plants tell how they figuratively, but certainly not literally, cast safety to the winds. The 56 Owens-Illinois plants released 33,000 helium-filled balloons, each bearing the slogan "Safety Carries You A Long Way." To each balloon there was attached a postcard showing the company's return address and the name of an O-I employee.

Cash prizes were given to those employees whose balloons traveled farthest from point of origin, provided there were no lost-time accidents in their departments during a given period.

A Tennessee mountaineer; a Long Island Sound fisherman; a New England housewife thus helped an O-I employee win a prize for his contribution to safety.

The result? A 75 percent drop in O-I accidents in a single month. As if that one company had not utilized enough imagination and dramatic impact, the same organization trained its guns on the problem of eye accidents, depicted in another August feature. . . .

● "YOUR RICHEST GIFT"

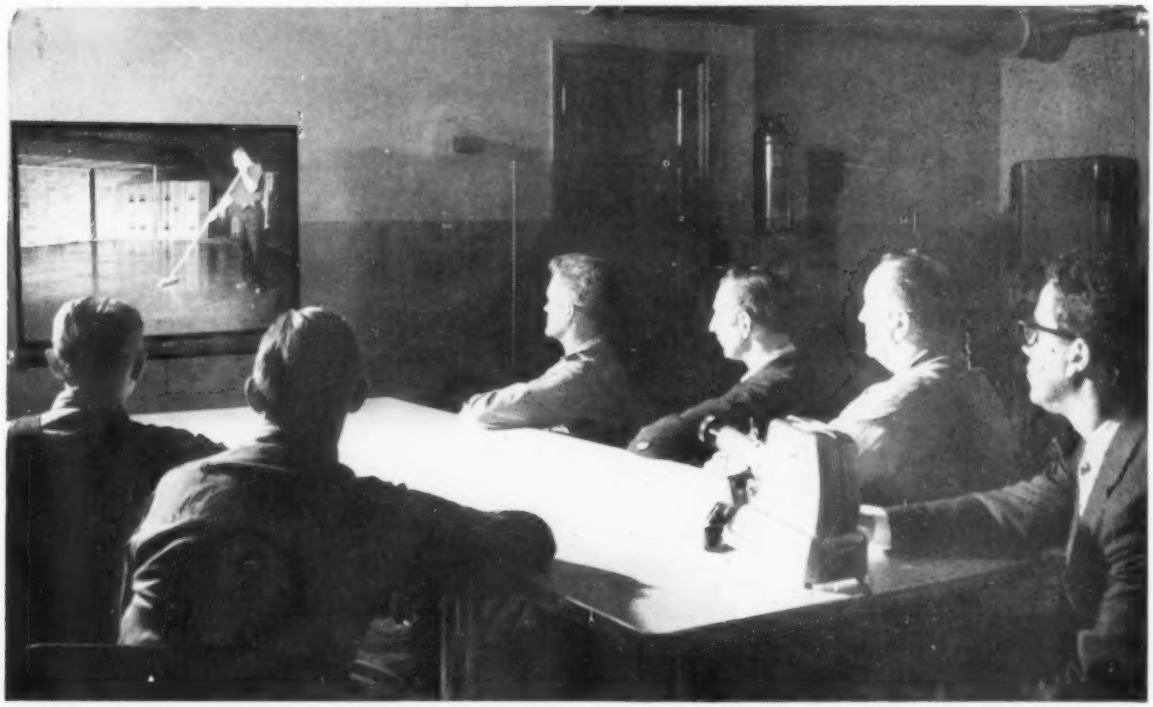
Safety Director H. V. Gardner of Owens-Illinois predicted, "If I could throw an occasional baseball at every one of our 33,000-odd employees, my job would be easier; at least they would wear catcher's masks to protect the eyes and face."

After making significant gains in reducing eye injuries, the same company has prepared a new motion picture film "Your Richest Gift" to dramatize eye protection and throw a stronger spotlight on their methods of achieving an outstanding ten-year record in preventing eye injuries.

Nowhere in the film is there emphasis on scare-stuff. The film shows right and wrong answers to everyday problems confronting plants whether the payroll covers 300 or 33,000 employees. Once more, Owens-Illinois recognizes the value of injecting drama and imagery into one of the most commonplace hazards in any line of industry.

It's news when SAFETY MAINTENANCE devotes two main features in the same issue to the practical aspects of safety put to use by the same company.

It's equally big news when the safety, operating and executive departments of a company concoct a continuing, healthy dose of imagination to capture the interest of the entire country. It is one editor's opinion that routine congratulations are an inadequate tribute for the O-I organization . . . they deserve the gratitude of all industry and certainly that of their very fortunate employees.



They're learning scientific floor care

No uniformed ushers or popcorn for this audience . . . but the men who are viewing this film are here on mighty important business.

They're learning how to keep their floors more attractive with fewer gallons of material and fewer hours of time.

6 new floor maintenance films. In recent months, MULTI-CLEAN'S Research Department has produced 6 new film strips illustrating scientific MULTI-CLEAN METHODS of floor care. These are titled:

- *Your Asphalt Tile Floor . . . Its Care and Maintenance*
- *The Treatment and Maintenance of Concrete Floors*
- *Installation, Finishing, and Maintenance of Gymnasium Floors*
- *Care and Maintenance of your Rubber Tile Floors*
- *Terrazzo and Oxychloride . . . and How to Maintain Them*
- *How to Care for Vinyl and Vinyl Asbestos Tile Floors*

Each film explains and illustrates the step-by-step METHOD for initial treatment, continued maintenance, and restoration of a particular type floor. They show the right materials, the right equipment, and the right technique.

Your men will enjoy the opportunity to increase their knowledge and improve their floor care technique by studying these films. Many ask for a second and third showing. "Best we've ever seen," they tell us.

Arrange free showing. Give your maintenance personnel the opportunity to see these free training films. Just fill in and mail the coupon . . . or call your local MULTI-CLEAN Distributor today. You'll be under no obligation whatsoever.

MULTI-CLEAN PRODUCTS, INC., SP-36-88
St. Paul 16, Minnesota

I'd like to arrange for my staff to view films on MULTI-CLEAN METHOD of care for these floors:

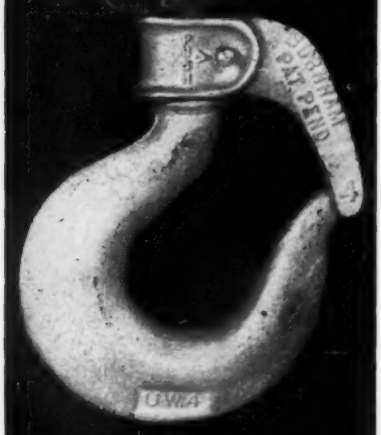
☐ Asphalt Tile ☐ Gym Floors ☐ Terrazzo
☐ Concrete ☐ Rubber Tile ☐ Vinyl Tile

Name_____

Address_____

City_____ Zone____ State_____

THE
Bullard-
Burnham
SAFETY
HOOK



At last a 100% safe hook for every type of hoist and puller. The pushbutton safety gate automatically locks closed, yet opens instantly with a touch of the finger. The safety gate also acts as an indicator to warn operators if the hook is even slightly sprung. Bullard-Burnham hooks are available in sizes #2 - #16A.

With gate open the hook's throat is entirely free.

Write for technical bulletin No. 278.

EVERYTHING BULLARD IN SAFETY

PLANT ENGINEERING FILE

BULLARD

E. D. BULLARD COMPANY

SAUSALITO, CALIF.

(Use Key # T-3 on Inquiry Card on page 1)

San Francisco, Calif. *Sept. 14–19*

Annual Meeting of the American Association of Motor Vehicle Administrators (Fairmont Hotel). A.A. M.V.A., 912 Barr Bldg., Washington 6, D.C.

Cleveland, Ohio *September 16–18*

Twentieth Annual Safety Conference (Pick-Carter Hotel). H. G. Hayes, Secretary-Treasurer, Ohio State Safety Council, 8 East Chestnut St., Columbus 15, Ohio.

Rockland, Me. *September 18–19*

Thirty-First Annual Maine State Safety Conference (Samoset Hotel). Arthur F. Minchin, Secretary, Department of Labor and Industry, State House, Augusta, Maine.

White Sulphur Springs, W. Va. *Sept. 22–24*

Meeting of The Material Handling Institute, Inc. (The Greenbrier) Hanson & Shea, Inc., 1 Gateway Center, Pittsburgh 22, Pa.

Chicago, Ill. *October 9–10*

Ninth Annual National Noise Abatement Symposium (Hotel Sherman). Hale J. Sabine, Physics Research Dept., Armour Research Foundation, 10 W. 35th St., Chicago 16, Ill.

Chicago, Ill. *October 20–24*

Forty-Sixth National Safety Congress and Exposition (Conrad Hilton Hotel). R. L. Forney, Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

St. Louis, Mo. *October 27–31*

Eighty-Sixth Annual Meeting of the American Public Health Association. Dr. Berwyn F. Mattison, Executive Secretary, American Public Health Assoc., 1790 Broadway, New York 19, N. Y.

Philadelphia, Pa. *November 3–6*

Third Annual Industrial & Building Sanitation Maintenance Show (Convention Hall). Orkin Exposition Management, 19 W. 44th St., New York 36, N. Y.

Jacksonville, Fla. *November 13–15*

Eleventh Annual Convention of the International Rescue and First Aid Association (Hotel George Washington). Max L. Spray, executive director, International Rescue & First Aid Assoc., 101 N. Alfred St., Alexandria, Va.

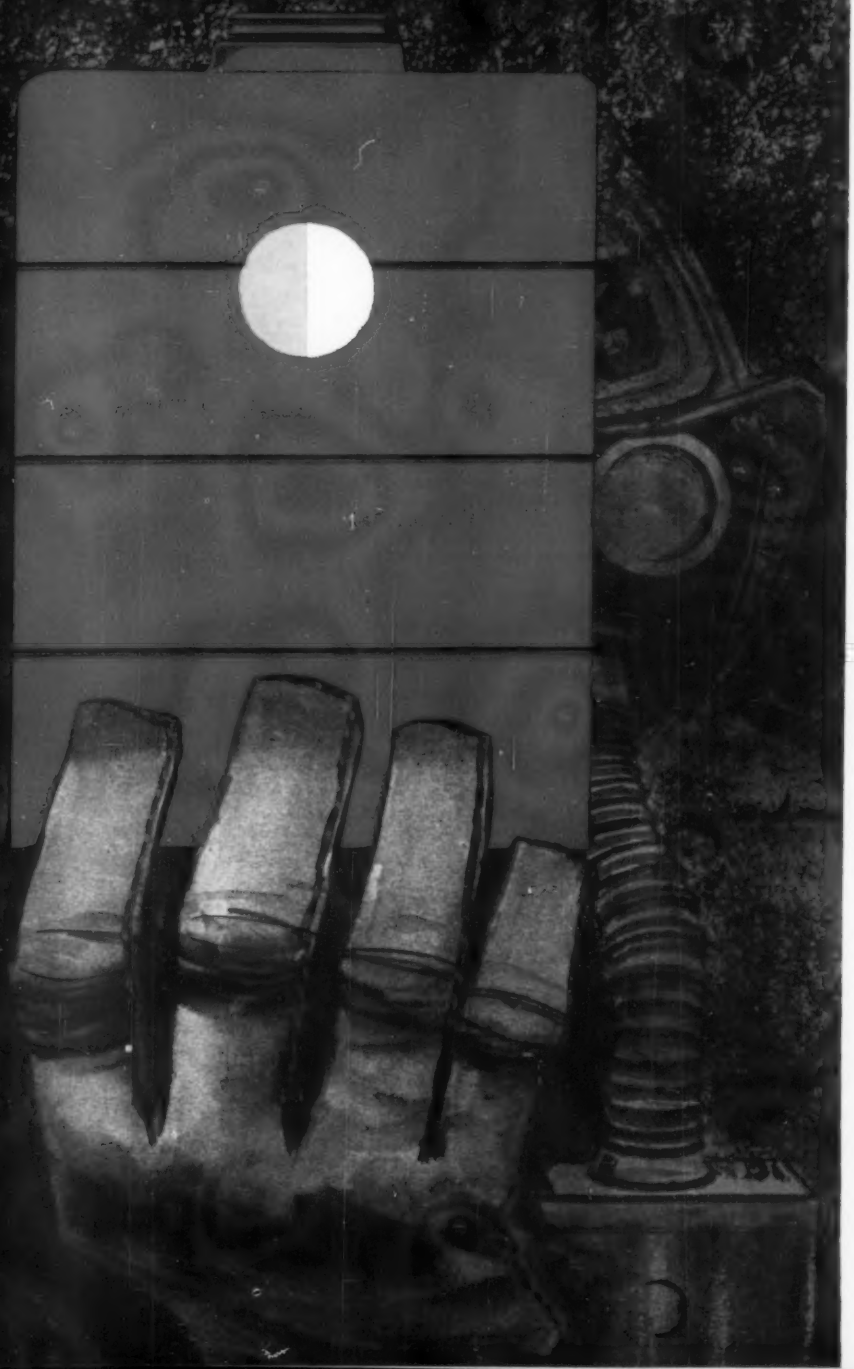
New York, N. Y. *Nov. 30–Dec. 5*

Annual Meeting of the American Society of Mechanical Engineers (Statler and Sheraton-McAlpin Hotels). American Society of Mechanical Engineers, 29 W. 39th St., New York 18, N. Y.

Fort Wayne, Ind. *March 17–18*

Northeastern Indiana Safety Conference & Exhibit. Ivan A. Martin, Manager, Safety Council, Chamber of Commerce of Fort Wayne, Ft. Wayne 2, Ind.

New Window Concept in Gas Mask* Canisters provides reliable visual signal that shows when the canister is spent



*Type N gas masks equipped with *Window Indicator* canisters have U.S. Bureau of Mines Approval, Schedule 14. These masks also are referred to and identified as All-Purpose — All-Service — Protexall — Smoke-Eater — and Universal.

New materials and new techniques are placing greater demands on emergency equipment in fire fighting and industry. So gas masks today have to be more dependable than ever.

In step with these greater demands is this new concept in gas mask canisters — the *Window Indicator*. It gives an accurate visual signal that shows when to change canisters; therefore the device is a valuable safety aid when masks are in storage or at the ready, awaiting use.

Here's how it works. One half of the window contains a reference color; the other half contains an indicating color. When both colors match up, the service life of the canister for protection against *carbon monoxide* is spent.

This *Window Indicator* development is the result of a joint undertaking by the Gas Mask Group of the I.S.E.A.

INDUSTRIAL SAFETY EQUIPMENT ASSOCIATION

Gas Mask and Hose Masks Group
Acme Protection Equipment Company
E. D. Bullard Company
Davis Emergency Equipment Company
Mine Safety Appliances Company
Willson Products Division

(Use Key # T-4 on Inquiry Card on page 1)

One accident that doesn't happen can pay for

ALCOA ABRASIVE TREAD PLATE

An employee slips on stairs, severely fractures his right heel. Disability is permanent. Medical expenses top $500. Employee compensation comes to $2,956.43. Production time is lost while a new employee is trained for the job. The employer's accident rate is up.

Such expensive and unnecessary slipping accidents kill or maim 20,000 workers in industry every year. To prevent such accidents, Alcoa® Aluminum Abrasive Tread Plate remains slip-proof even when wet, oily or greasy. Made of tough particles of fused aluminum oxide, its hard, abrasive surface is the only nonskid floor plate that gives you the advantages of lightweight, corrosion-resistant aluminum.

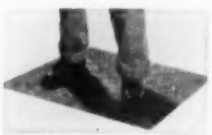
For more information on how you can eliminate hazardous conditions from floors, stairs, ramps and other areas, check the coupon below; write Aluminum Company of America, 1662-H Alcoa Building, or call your nearest Alcoa distributor.

MAKE YOUR OWN 30-second Safety Test . . . Check the Coupon for FREE Sample of Alcoa Aluminum Abrasive Tread Plate.

Your Guide to the Best in Aluminum Value

"ALCOA THEATRE"

Exciting Adventure. Alternate Monday Evenings



No slips . . . no falls . . . no injuries with the safe, sure grip you get from Alcoa Abrasive Tread Plate.

ALUMINUM COMPANY OF AMERICA
1662-H Alcoa Building, Pittsburgh 19, Pa.

I'd like to see how Alcoa Abrasive Tread Plate prevents slipping. Please send me FREE sample—also application, design and fabricating data.

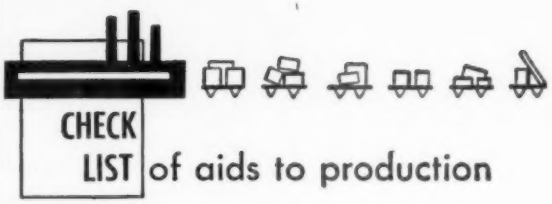
Name and Title _____

Company _____

Address _____

City and State _____

(For details, use Key # T-5 on card on page 1)



of aids to production

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Coated Fabric Gloves 56
Acid & Solvent Resistant Gloves 56
Air Conditioned Work Glove 57
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Full-Foot Safety Shoe 57
Rocket Fuel Coverall 57
Lightweight Industrial Raincoat 58
Improved Conductive Bootie 58
Waterproof Safety Shoe 58
Static & Lint Free Clothing 58
New Construction for Safety Hats 58
Reversible Hot Mill Gloves 59
Plastic Safety Hat 59
New Coated Gloves 59
Chemical-Resistant Clothing 60
High Visibility Yellow Rainwear 60
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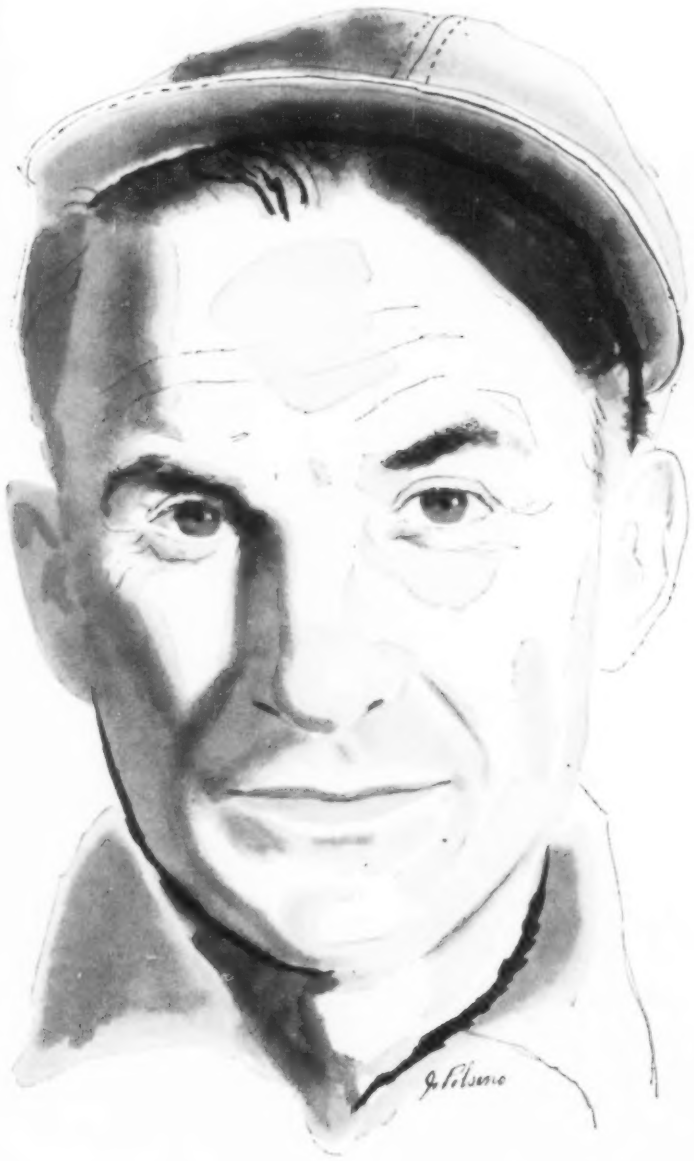
An expert in check-out helped us check up



This test pilot of ours has checked out every new design we've had in the last two years. His business is finding answers to questions. But last week he asked *us* one.

"Why can't we rig it so I can buy U. S. Savings Bonds out of my salary, automatically?" he asked. "I want to save, but I keep forgetting about it."

We told him, of course, that we've had Payroll Savings for years. Within minutes his card was signed and he was brought into the Plan. Then we decided to check up and see how many other people on our staff had never heard about the Plan. There were quite a few.

A telephone call to our State Savings Bond Director was all we needed. He supplied us with the latest booklets, folders and forms. Then he conducted a survey straight through our company and put an application blank in the hands of every single employee.

There wasn't a bit of pressure about this information campaign, but the way our people responded was inspiring. They proved that the average American wants the fine investment security that U. S. Savings Bonds provide.

Today there are more Payroll savers than ever before in peacetime. Your State Director will be happy to help you install a Payroll Savings Plan or build enrollment in one already existing. Look him up in the phone book or write: Savings Bonds Division, U. S. Treasury Dept., Washington, D. C.

SAFETY MAINTENANCE

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SOUND PROTECTION

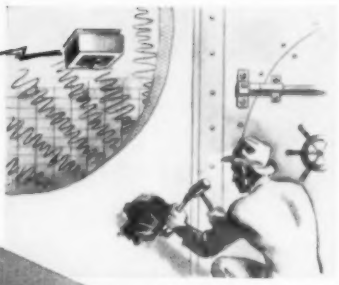
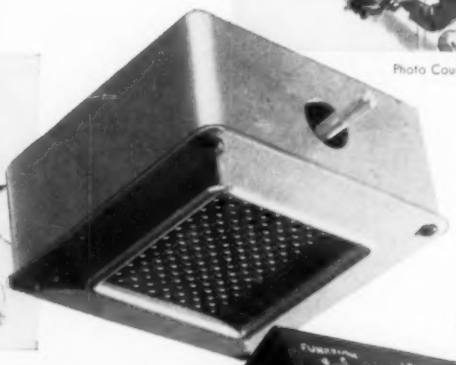


Photo Courtesy American District Telegraph



The G-R Type 1555-A Sound-Survey Meter

PRICE: $150

Millions of dollars worth of valuables are protected by this little box on the vault ceiling. It is a part of the ADT Phonetalarm detection system, a supersensitive microphone which reacts to sounds of forced entry caused by hammering, drilling, or explosion. Sounds such as these cause the system to summon police automatically.

The G-R Type 1555-A Sound-Survey Meter is used during installation of ADT Phonetalarm systems to determine the acoustical characteristics of vaults. In this way, each Phonetalarm installation is tailored to individual vault conditions, assuring positive burglar detection.

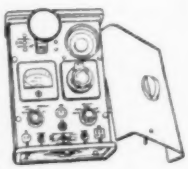
The Sound-Survey Meter is an easy-to-use, pocket-size meter for general purpose work where the refinements of more expensive sound-measuring equipment are not needed. Typical uses include:

- ★ Determining noise levels of appliances, machinery, and office equipment for product improvement.
- ★ Noise-control surveys in homes, offices, factories, and vehicles for protection against hearing damage.
- ★ Public-address-system installations in auditoriums, theaters, and restaurants.

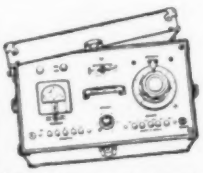
The Sound-Survey Meter is completely self-contained: microphone, attenuator, amplifier with weighting networks, and indicating meter are in a compact 6″ x 3⅛″ x 2½″ package.

Range is from 40 db to 136 db above standard reference level. Three ASA frequency characteristics are provided. The "C" weighting network provides a flat response to all frequencies between 40 and 8,000 cps.

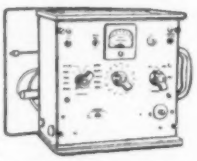
Type 1551-A Sound-Level Meter, $385 . . . basic tool of the G-R Sound-Measuring line . . . range is from 24 db to 140 db, and to 190 db with accessory high-level microphones . . . built-in weighting networks as specified in ASA standards . . . internal calibration system permits convenient, rapid standardization . . . light in weight, dependable, compact, and completely self-contained.



Type 760-B Sound Analyzer, $520 . . . for narrow-band measurements . . . ideal for analyzing noises of rotating, reciprocating, and other cyclic mechanisms where prevalent frequency components are harmonically related . . . direct reading over 25- to 7500-cycle range . . . bandwidth is 2% of selected frequency . . . instrument frequency response is flat within ±2 db over entire range.



Type 1550-A Octave-Band Noise Analyzer, $535 . . . for rapid, accurate analyses of broad-band sounds (rattles, buzzes, hisses) whose sound energies are widely distributed over the audio spectrum . . . 8 bands cover the frequency range from 20 to 10,000 cycles . . . valuable for determining noise spectra of vehicles and machinery, for measuring sound-transmission losses of building walls, partitions, and floors, and for conducting speech-interference investigations.



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What Were The Safety Invaders

Things from outer space?

On top of Copper Ridge near Thorn Hill, Tennessee, a startled mountaineer peered up into a big oak tree—then sighted down the long barrel of his gun and pulled the trigger.

On Long Island Sound a fisherman rested his oars, gingerly pulled in a floating object, and scratched his head at what he found.

In Connecticut a housewife ran outside to see what the dogs had treed in the back yard—and suddenly began climbing the old maple tree to retrieve something caught in its branches.

The mountaineer, the fisherman and the housewife reacted in different ways, but their response was the same. They wrote their names and addresses on postcards carried to them by children's balloons and then dropped the cards in the mail.

By doing so they and several hundred other persons throughout the country shared in one of the most dramatic and successful industrial safety programs ever staged by Owens-Illinois Glass Co.

April was "No Accident Month" for the company. To highlight the importance of being careful, the company cast "safety" to the four winds in the form of 33,000 balloons filled with helium and bearing on their sides the slogan "Safety carries you a long way."

On April 1 the balloons were released at 56 Owens-Illinois plant and mill locations from coast to coast. Each balloon carried a postcard bearing the return address of the company releasing it. Upon each card was written the name of an O-I employee.

Finders of the balloons were asked to return the card, indicating where it was found so that its "mileage" could be computed. Cash prizes were given those employees whose balloons traveled farthest—on condition that there were no lost-time accidents in their respective departments during the month.

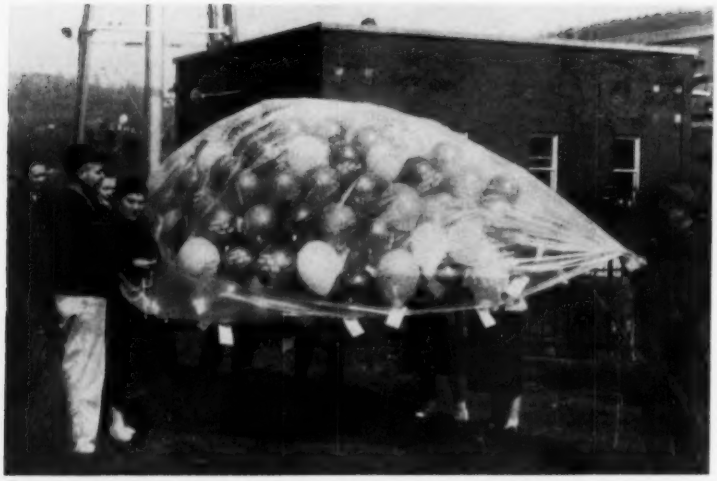
The Tennessee mountaineer returned his card to the company's glass block and electrical insulator plant at Muncie, Ind., 306 air miles away.

The card was sprinkled with buckshot holes, and was accompanied by a letter.

"I writing you in reguard to the card you all sent up with balloons," the writer said. "I found this one morning in top a large oak tree. Hade to shoot it out with a shoot gun. found it on top of Copper Ridge. The ridge between Clinch Mountain and Log Mountain."

His card was one of 100 returned to the plant out of 250 released.

The card retrieved from Long Island Sound had been released by



SIX HUNDRED SAFETY MESSAGES ABOUT TO BE RELEASED—Employees at this glass container plant hold a plastic sheet of helium-filled balloons. Some of the return-addressed cards sent with balloons show below the sheet.

BALLOONS AWAY!—Seconds after they are released from the plastic sheet that held them, the 600 balloons from the W. Virginia plant soar off into the sky. Some went hundreds of miles, others no more than a few blocks.

Owens-Illinois' Vineland plant, 120 miles away. It was not the most distant card returned to that plant, however. That honor went to one found 315 miles away in Jeffersonville, Vt.

The highest-flying balloon out of the 1,800 released at the Streator, Ill., plant traveled all the way to Teacheys, N. C., or 715 miles.

The Gas City, Ind., plant received 78 cards back in the mail, among them one from a gentleman who was apparently so impressed with the company's safety efforts that he asked for a job.

The most distant point reached by a Gas City balloon was Long Branch, W. Va., some 400 miles.

Oddly, the first card returned to the Owens-Illinois plant in Los Angeles was found by Michael A. Horan, who sent it back in a letter complimenting the company on its safety program. Mr. Horan was particularly interested because he is safety director at the U. S. Army garrison at Camp Stoneman in California.

H. V. Gardner, Owens-Illinois safety director, is more than enthusiastic about the results of "No Accident Month."

It was the most successful of the many campaigns the company has sponsored in April, a month traditionally plagued by industrial accidents because of the "spring letdown," as Mr. Gardner calls it.

By the end of the month, five lost-time accidents had been reported among the 33,000-odd employees who participated in the contest.

(Continued on page 20)

INTO THE PATHLESS BLUE—Six hundred balloons rise quickly and are soon lost from view over the mountains. Hundreds came down in the forests and in other inaccessible places, but cards from many others were mailed in.

AERIAL SCORE BOARD—Big maps, like the one above at the glass company's Illinois branch helped employees keep track of their plant's balloons. Pins on the maps showed places where high-flying safety-slogans were recovered.

LIGHTS — CAMERA — ACTION! Full attention here is being focused on the set as shooting of the new film on eye safety, "Your Richest Gift," proceeds.

EYE SAFETY FILM

As impractical as this might be, H. V. Gardner thinks his job might be easier if somebody went around throwing an occasional baseball at each of the 33,000-odd employees of Owens-Illinois Glass Co. who work in the company's plants and mills.

"At least they might wear catchers' masks then," says Mr. Gardner, who is safety director of Owens-Illinois and therefore anxious to try almost anything that will get his people to wear the protective devices the company provides to safeguard the worker's most priceless possession—his eyes.

Mr. Gardner's eye-safety program isn't in nearly the shape his catchers' mask idea might seem to indicate. Actually, the company has made significant gains in cutting down eye injuries, and a new film on the subject prepared by Owens-Illinois is in a way a tribute to a remarkable 10-year record.

The film, "Your Richest Gift," is a re-do of an earlier Owens-Illinois film that was made when the company's record on eye-safety was not so good. In fact, the original "Your Richest Gift" was made BECAUSE of this not-so-good record.

That was back in 1946. Company accident figures showed that one out of every three lost-time accidents involved the eyes. Something had to be done about it—something dramatic that would bring home to every employee the significance of the words spoken by the doctor in the film:

"Just two of them. That's all you have . . . they can't be replaced when they're gone."

Judged against almost any yardstick, the film was a tremendous success. The company wore out 50 prints showing it to a quarter of a million persons. Another 250,000 persons saw it in showings of the 150 prints Owens-Illinois sold to other industrial firms, insurance companies, and safety and government organizations.

Figures like these are impressive, but they don't tell the whole story. That is to be found in the current accident trends in Owens-Illinois plants and mills. Today, the frequency of eye accidents in relation to all lost-time accidents is one out of four, an appreciable improvement over the one-in-three ratio that prevailed when the film was originally shot.

"Your Richest Gift" is a dramatic warning against carelessness.

It is the voice of the young woman on the selecting line saying, "Glasses look terrible on girls!" —and the closeup of the feminine hand groping on a table for a book of matches.

It is the man's voice complaining that "Safety glasses are too hot . . . too heavy . . . too uncomfortable,"

(Continued on page 26)

In Part 1, in the July issue, the author discussed ways of arranging push-button controls to decrease the possibility of accidents.

Engineer into Plant Equipment

by **RICHARD F. THUMA**, Supt.
Tools & Maintenance,
Industries Group
West Allis Works
Allis-Chalmers Mfg. Co.

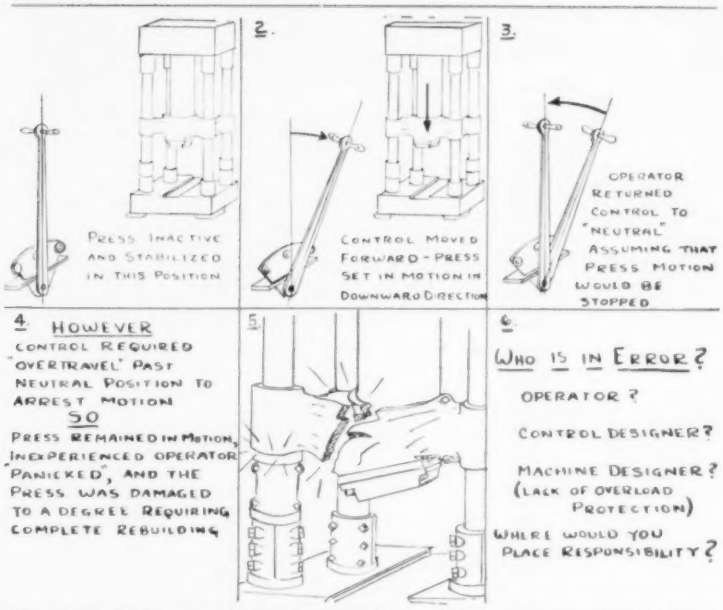

2.
3.
PRESS INACTIVE AND STABILIZED IN THIS POSITION
CONTROL MOVED FORWARD - PRESS SET IN MOTION IN DOWNWARD DIRECTION
OPERATOR RETURNED CONTROL TO "NEUTRAL" ASSUMING THAT PRESS MOTION WOULD BE STOPPED
4. HOWEVER CONTROL REQUIRED "OVERTRAVEL" PAST NEUTRAL POSITION TO ARREST MOTION
SO
PRESS REMAINED IN MOTION, INEXPERIENCED OPERATOR "PANICKED", AND THE PRESS WAS DAMAGED TO A DEGREE REQUIRING COMPLETE REBUILDING
5.
6.
WHO IS IN ERROR?
OPERATOR ?
CONTROL DESIGNER?
MACHINE DESIGNER? (LACK OF OVERLOAD PROTECTION)
WHERE WOULD YOU PLACE RESPONSIBILITY?

Fig. 2—Sketch shows control type on 2500 ton press. Press was stopped in the position seen in panel 1. For downward motion, lever was put forward. Operator then neutralized control, expecting press to stop. Result—damage as shown!

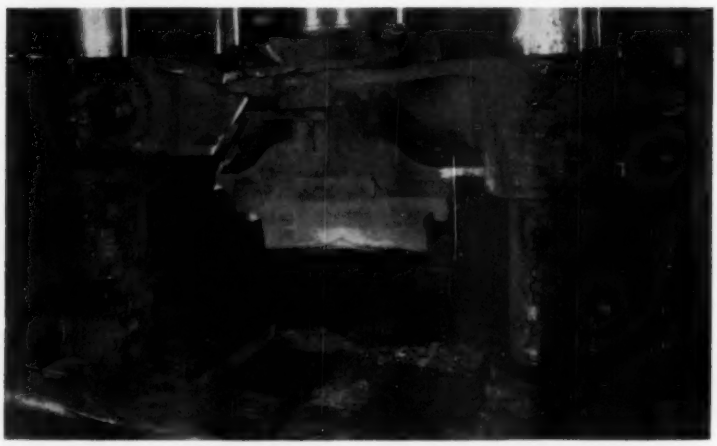


Fig. 3—How press looked a few seconds after maintenance employee thought he turned it off. Platen came down against the stops on alternate corners. Not designed to withstand stresses involved, it ruptured as picture shows.

In spite of the increasing use of push button controls, we will undoubtedly continue to have manual control levers on many machines. Such levers, properly designed, have their advantages. Several obvious fundamentals apply to the design of such levers. All control levers should be arranged so that machine components move in the direction in which the lever is moved.

Where possible a small movement of the lever should result in a slow motion and a farther movement should produce an accelerated motion. It is advantageous to combine several motions into a single "joy stick" type of control when this is feasible.

If moving a lever to a given position produces a given motion, returning the lever to its original position should arrest this motion. We had a rather spectacular and expensive accident caused by a violation of this rule. Several years ago a maintenance operator was working on a 2500-ton forging press in our forge shop. He moved the controls to lower the platen and then returned the controls to the neutral position. What he did not know was that the controls were arranged so that it was necessary to move them beyond the neutral position and then back to neutral to stop the operation of the press. (See Figure 2) Since the motion was slow, he was not aware

Safety

Part II

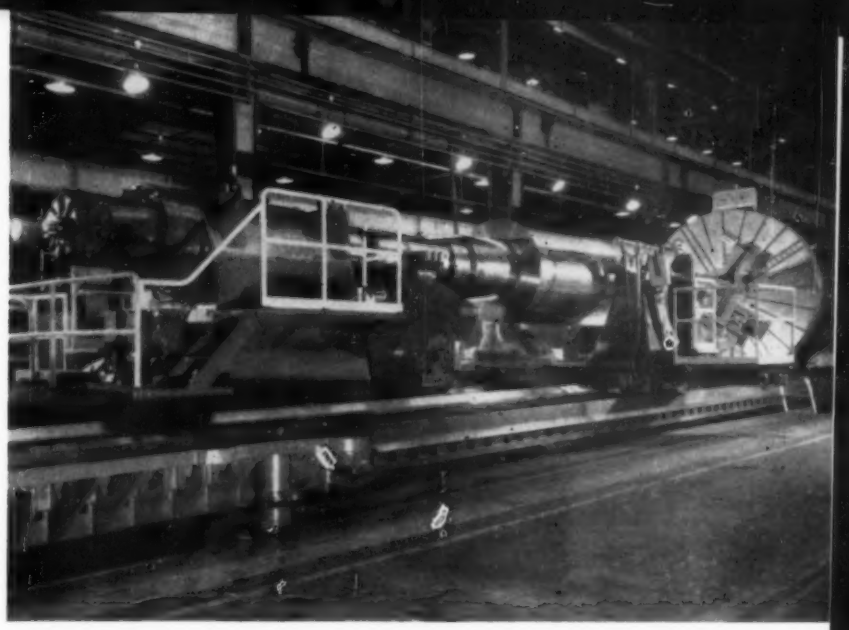


Fig. 1 This heavy duty modern engine lathe has many of the safety precautions and features discussed in this article and in Part I in the July issue. This is one of the largest lathes of its kind in the country. It will swing 148 inches over the bed and hold a piece 60 ft. long between centers. Swing over the carriage is 109 inches, and load capacity on centers for turning steady rest supports is 200 tons or 125 tons on either center.

The lathe has a 200-hp drive motor with infinitely variable speed range from .5 to 60 rpm. It has electric feeds with a feed rate of from .002 inch to 1 inch per revolution. It has front and back tool posts with a compound on the front tool post, and the ball bearing tailstock quill is 30 inches in diameter.

In front is visible a taper attachment capable of machining a taper 14 ft. long in a single pass with a 24 degree included angle. The machine is arranged for thread cutting. All dc motors are drip-proof protected with filtered blower coolers and all ac motors are totally enclosed.

Complete control of feeds and speeds can be obtained from the carriage with the exception of one manual gear change in the head stock and there are push-button pendants on both front and back tool posts. These pendants have selector switches so that only one pendant at a time can be activated, except for the emergency stop button. There is also an emergency stop button at the head stock with jog buttons for setting up a job. The gear shift levers are interlocked and guards are installed on all rotating parts, couplings, etc.

The lathe's tail stock and carriage have railings and platforms complete with stairs and toe boards. The carriage platforms are removable where required because of characteristics of the part being machined. A tachometer above the face plate indicates the pre-set speed and a load indicator shows the percentage of available power being used. Terminal boxes are sealed against water and oil. Underneath the machine is a chip conveyor and a well-lighted pit in which a man can walk upright the full length of the machine. Convenient access ladders are installed at each end with railings and gates.

The machine is equipped throughout with limit switches, which include tail stock travel; quill travel, in and out; collision switches between the carriage and the tail stock, the head stock, and steady rests; out-travel of the tool posts, collision switches on in-travel of the tool posts, and a slip coupling on the travel of the compound.

that anything was wrong until he heard a crunching sound. To his amazement the press had moved to the point where the platen had contacted the stop collars, and what was formerly a 2500-ton press was a pile of junk. (See Figure 3) The repair cost in this instance exceeded $50,000 and the equipment was out of production for six weeks. Fortunately no one was injured.

The Industrial Commission's codes of the state in which an installation is to be made are usually a general guide to safe practices. In no case should a piece of equipment be installed which does not at least meet the code requirements of that particular area. Unfortunately, various state codes vary widely in scope and strictness. As a result, manufacturers are inclined to arrive at their own conception as to the inherent safety factors of their machinery. Often the machine and the code of the particular location in which the machine is installed are not in complete agreement.

We follow the practice of specifying on a request for quotation and on purchase orders for machines and equipment that the item covered by the order must meet the Wisconsin Industrial Commission Code.

We take the attitude that if a machine builder's representative is going to sell tools to us, he should not only be completely familiar with the applicable code, but should submit this information to his principles so that when a machine is received additional work will not be required to pass inspection.

While we frequently have been asked and have willingly sent copies of the applicable codes to our machine tool suppliers, we have never encountered a flat refusal to furnish the machine suitably equipped. Only in one or two isolated cases have we incurred any extra expense as a result of these provisions. It has been very gratifying to us to discover that in many cases the guarding or safety provisions which we initially requested as "special" have later become standard on the machine as furnished to all customers. We suggest that if other equipment users would follow this policy, vendors would become more conscious of their omissions and would make the necessary corrections.

Some of the omissions that occur most frequently include:

inadequate guards over moving parts, shafts, and couplings;

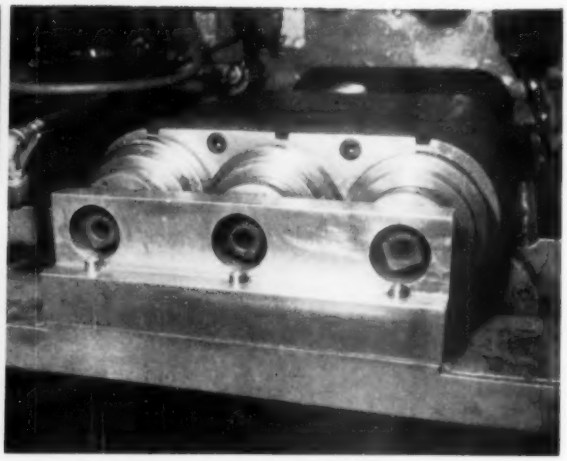


Fig. 4—(Above) Screws with non-rotating squares for compound, cross slide on modern, heavy-duty lathes. Under plate are two sets of clutches. For manual operation, lever at left is placed in "Hand" position. There's no motion if power is turned on with crank in place.

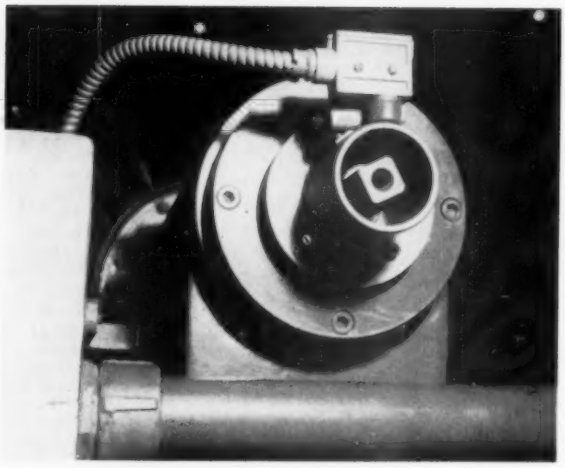


Fig. 5—(Above—Right)—Another solution to rotating crank. Screws control motion on a compound and on front and back tool posts on a 144-inch style lathe. Squares turn by power but limit switches at bottom shut off power when crank is inserted.

Fig. 6—This square slipped by unnoticed at machine installation, since unit is rarely used. Man, leaving wrench in place, pushed button—suffered arm injury. A limit switch was added (as shown) to cut off power when crank is inserted.

platforms which do not have adequate railings or toe boards;

ladders without guards to prevent a man from falling over backwards if hand or foot should slip.

Chip Removal

Chip removal should be given careful consideration as the designer may be thinking more about making the piece than getting rid of the chips. Chip pans should be easy to clean, generously sloped for draining, and have provisions to keep oily chips and coolants off of the floor. Don't overlook the possibility of chip conveyors on large machines. Not only do new machines make a lot of chips, but with present speeds and feeds these chips are "hot" and can cause serious burns.

The old "bugaboo" of rotating hand wheels is still with us and in some respects even more serious. In the past, hand wheels were a component of practically all machines and the hazard was recognized. Now many of the new push button controlled machines have no hand wheels, but only a square on which a crank can be used, when necessary.

Removal Overlooked

Since the operator is unaccustomed to using such equipment, he easily forgets to remove it. The crank, normally used in such instances, is far more dangerous than the old hand wheel. We have gone to great length to alleviate this condition on new machines. Ratchet cranks are not the solution. Sooner or later they may stick. They encourage the man to leave the wrench on the machine, and too many of these components require reversing. Where hand wheels must be used, they should be closed, without spokes and no handles used. Suggested solutions to the problem of hand cranks are shown in Figures 4, 5 and 6.

An adequate supply of "eye" bolt holes should be provided, both to facilitate safe assembly and dismantling for future repairs. Tap them only in ¼" increments, that is, don't use "eye" bolts with ⅝", ⅞", or 1⅛" threads. I still shudder when I think of the time we lifted a boring mill head with a 1¾"—5

thread "eye" bolt and found out, after it was safely on the floor, that it was tapped with 1⅞"—5 thread.

Some machines are provided with access doors to cover change gears, lubricating points, Texrope drives, etc., and when opened, present the hazard of fast moving finger "cutter-offers." Such access doors and covers should be electrically interlocked to prevent machine operation with the doors open. (See Figures 7 & 8)

The use of centralized lubrication systems is commonly accepted as a method to assure better lubrication. They also eliminate safety hazards when used to lubricate hard to reach points, making it unnecessary for the oiler to climb over or on top of machinery where he is likely to fall or be knocked off, or crushed by overhead crane facilities. Even with present lockout procedures, it is very difficult to make an oiler de-energize crane facilities before he climbs on top of a machine.

Clutches should be designed so that the spindle won't creep when the clutch is in neutral. The neutral position should be definitely located so that the operator does not have to establish it by precariously "jockeying" the lever to forward and reverse positions until the spindle stops.

Machine components should be arranged so that protection is supplied against overtravel or collision between components. This control should be positive and the protection should preferably be provided by de-energizing motors, de-clutching drive gears, through overload or friction clutches, or as a last resort, through shear pins. Unfortunately, there seems to be no way to prevent the running of a lathe compound or boring mill ram against the work piece. But such an accident is less likely to occur because the operator's attention is usually focused on this area where the chips are being cut.

Limit switches should be considered as an emergency device and not to be used as a "lazy man's stop" during normal operations. If you do want to operate with such switches, then additional limit switches should be provided for the almost inevitable emergency.

Fig. 7—Milling machine with cover over the drive in order to prevent entrance of fingers, any other foreign objects.

Fig. 8—Same milling machine with cover open exposing "Texrope" V-belt drive. A finger points to switch, injury preventive.

Machine Installation

Having purchased, or designed and built, a safe piece of equipment, and having upon arrival at your plant confirmed its condition through inspection by qualified personnel, the next major consideration is the manner in which the equipment is installed. Starting with the foundation, the pits should be sealed, painted, and arranged to encourage good housekeeping and make it easy to keep the floor clean and dry to eliminate slips or falls. Install sump pumps, if necessary. Adequate access ladders or stairs should be provided, and on some big installations you may want more than one exit. Good ventilation is a "must" to eliminate any possibility of asphyxiation, and incidentally a cool pit is advantageous to the machine too. As a suggestion, if you have motors in the pit that are blower ventilated, duct fresh air to the blower inlet, then let the blower cool the motor and ventilate the pit too.

All openings to the pit should be provided with railings and gates, and don't forget lighting in the pit as well as on the machine itself.

Stop Buttons

We make a practice of conveniently locating stop buttons in such pits, as well as on the machine, so that the machine can be quickly stopped in an emergency. If an ordinary disconnect switch is used in place of a stop button, and the switch can be locked, you are providing an easy way for a maintenance man to lock out a machine when working in these areas.

The installation must provide adequate space for the operator to do his work, and should have clearly defined spaces for incoming and outgoing material and also for storing machine accessories and tooling when not in use. To mount such tooling on the machine the operator must not have to work in awkward positions or lift heavier loads than he can safely handle. Jib crane installations to augment overhead facilities may not only provide safer operation, but decrease setup time as well.

We should also examine the specific operations to be performed on the piece of equipment which has been installed. Because of the nature of special tooling used, or the work pieces to be held, it may be necessary to provide additional guards and safety interlocks.

The opinions of individuals may vary widely on these subjects. It is therefore advisable to establish certain standards, which might be more rigid than the applicable state code. Depending upon the size of the concern involved, such standards can be established by means of routine records and instructions, the administration of which might be the responsibility of a safety department. In the case of smaller concerns, uniformity can be secured

(Continued on page 20)

What's Inside a Good Sun Glass?

Millions of people buy sun glasses. Most of them choose a frame that looks good at a price they can afford, and let it go at that. Very few know what a top-grade sun spectacle can and should do for them—and what the poorer kind cannot do.

Actually a full fledged sun glass, with all improvements, does a good deal more than a pair of finely made ordinary prescription spectacles. Spectacles designed for ordinary year-round use do nothing except refract, or bend, the light in a way to correct defects of the eye. A fine sun glass not only can do that, but deals with certain peculiarities of light and of the eye which usually are only noticed in bright sunlight.

The first of these peculiarities is glare, or dazzle, or too much bright light. Up to a point, the pupil of the eye itself guards against glare by contracting to a small opening, like a camera diaphragm set for bright light. But beyond that point the pupil is powerless and other means are required for eye comfort.

Excluding glare from the eye is, in fact, the easiest of the several jobs done by sun glasses. You can make a very good glare-excluder yourself by smoking a piece of window glass in a candle flame. Such a smoked glass affords one of the safest ways of looking at an eclipse of the sun.

The Eskimos, who seldom see a piece of glass, solve the glare problem by cutting narrow slits in a wooden or bone shield, shaped to fit across the eyes. One might wonder why glare is a problem to the Eskimo when the polar sun hardly shows itself above the horizon during the winter and even in summer doesn't manage to emit much glare. What bothers the Eskimo is sunlight reflected from snow and ice, which builds up to a strong glare. It comes from all directions and the Eskimo's goggles exclude all of it except that part which happens to strike the narrow slit. So these primitive "glasses" actually do bring about a tremendous reduction in the amount of glare striking the eye. They are good enough to prevent snow blindness but are poor for seeing.

The Eskimo makes his sun goggles from wood or bone.

The fine grades of sun glasses are constructed to shut out (or, conversely to transmit) precise amounts of light—30, 50, 65 percent. That is one of the points at which they excel ordinary bargain-counter glasses. These latter, by the way, often do not shut out sufficient light.

But there is a far more subtle element in sunlight than ordinary glare. This other ingredient is invisible energy rays—X-rays, radio waves, ultra-violet and infra-red, and the like. These radiations don't help us to see, at all. But under certain conditions they can damage the eyes, as the metal-welder knows when he dons his helmet. Some of the long rays on the red end of the spectrum are associated with heat.

The glass of which some fine sun glasses are made is absorptive in addition to keeping out glare. That is, it absorbs or excludes

nearly all of the long-wave and short-wave radiations. Ordinarily, there are not enough of these radiations in the air to cause eye damage. But skiing or sledding on high mountain sides, or other exposures to snow, and in the reflected light from sand and water, as well as in driving a car over a sizzling hot highway, it is quite possible that there is too much radiation for comfort or safety. Every mountain climber knows, for instance, that one of the worst things that can happen to him is to lose or break his sun goggles. He will almost certainly be snow blinded by ultraviolet. When you can so easily keep these tricky waves out with better grade sun glasses, why not do it and be safe?

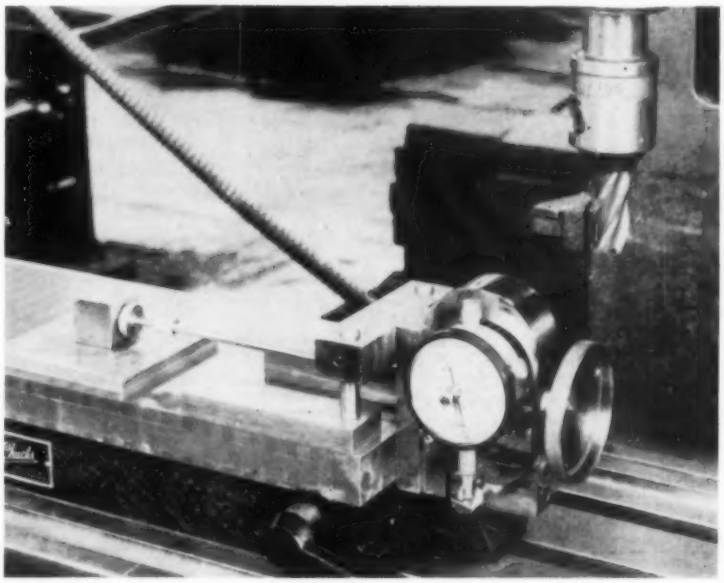
There is one other chore that the versatile sun glass, at its best, can do. Being made of fine, ophthalmic glass, sun spectacles can be ground to a corrective prescription, just like ordinary colorless reading glasses or distance glasses. Anybody who normally wears prescription glasses should have that prescription incorporated in his sun glasses. After all, one doesn't stop needing good vision when he puts on his sun glasses!

The comparatively new art of fashioning prescription lenses for various occupations and sports opens up still other possibilities for sun glasses. The golfer, the shooter, the tennis player can often benefit from sun glasses having a special focus, or from tinted bifocals or trifocals with specially placed segments to meet special seeing demands.

Material from Better Vision Institute.

"You said you were expecting trouble on this job—"

A SAFETY IDEA



New Testing Method for Magnetic Chucks

An unusual method for testing the gripping power of magnetic chucks has been developed by the O. S. Walker Company of Worcester, Mass. According to Walker engineers, chuck failure occurs when material slides on the chuck bed rather than being pulled from it. For this reason, the testing arrangement shown here is designed to record the load required to slip a steel block of prescribed dimension. A mechanical Force Gauge with maximum pointer is incorporated to facilitate this reading.

On the chuck bed, a steel block 3" square by ¼" thick is connected by a shaft to the testing mechanism. The mechanism itself consists of two steel plates anchored magnetically to the bed with the gauge bracket affixed vertically to these anchors and butted up against the end of the bed. The Force Gauge is seated vertically on this bracket. To the right of the gauge is a small hand wheel which is connected to the test shaft. It is threaded through the gauge bracket but not the gauge itself.

As the hand wheel is rotated, pressure is exerted on the test block gradually increasing until the block begins to slide. This force is accurately indicated by the maximum pointer of the Force Gauge.

The gauge illustrated will check loads between zero and 250 lbs. Other capacities are made, however, to indicate loads up to as high as 50,000 lbs.

Picture by courtesy of W. C. Dillon & Co., Inc.

Engineer Safety

(from page 17)

by having the same person or persons do the inspecting in all instances. Practical experience proves that the matter cannot be left to the judgment of a great number of individuals since lack of uniformity will inevitably result. We have an established release tag for inspection by various people such as the installation supervisor, electricians, machine repair supervision, lubrication supervision, machine tool inspection and a safety supervisor. (See Figure 9)

Safety suggestions and principles should pertain not only to purchased equipment but to equipment and special machines you may design and build. The tool engineers should work closely with the safety department during the layout and final design of special equipment. A more thorough and complete safety job can be done if safety is designed into the equipment instead of tied on with string and bailing wire after the equipment has been built.

Our experience with machine tool builders regarding the building of safety into equipment has been very satisfactory. They are almost invariably receptive and enthusiastic to suggestions that will make their equipment more safe and we are pleased to note that some of our safety suggestions have been ultimately incorporated into the standard design of their machines. But let me point out that they need help and safety suggestions from the users of the machines. We cannot reasonably expect that they can consider at the time of design all of the safety developments and improvements that we may make over many years of operation.

Unfortunately, many machinery accidents are followed up merely by tightening safety regulations and possibly by adding some safeguards to the machine involved. Too often the one step that could really help and really promote long range safety is omitted—that of notifying the machinery manufacturer concerning all details of the accident so that necessary safeguards can be incorporated into future designs, and possibly modifications can be made available to other users of existing machines.

We have the responsibility of teaching our operators and other employees safety principles and procedures, and following up to see that these are used. Our employees are constantly reminded of the necessity for considering safety a fundamental part of their job. But at the same time we have the responsibility of making our plant equipment and place of work as safe as possible. With the ever-changing technology of industrial processes and equipment, that responsibility becomes continuous and will be continual. Tomorrow's machines, and today's too, are still a safety challenge.

Pictures by courtesy of Allis-Chalmers Mfg. Co.

Equipment Release Tag

ALLIS CHALMERS — Form 5804-4 PRINTED IN U.S.A.

ORDER NO. | P. O. NO.
CONTRACT | MACH. TOOL NO.
REQUISITION NO. | DEPARTMENT NO.
DRAWING NO. | APPROPRIATION NO.

EQUIPMENT RELEASE

This Equipment Is Released To Shop For Operation When This Tag Is Signed By Installation Supervisor

SIGNED | DATE
INSTALLATION SUPERVISOR | DEPT.
SHOP PHONE | HOME PHONE | REMARKS (OVER)
TYPE OF EQUIPMENT
MANUFACTURED BY
EQUIPMENT DESCRIPTION

INSTALLATION APPROVAL BY

LUBRICATION | DATE
ELECTRICAL | DATE
MACHINE TOOL INSPECTOR APPROVED | DATE
SAFETY FOREMAN APPROVED | DATE
CONTRACT NO. | MACH. TOOL NO.
DRAWING NO.

CAUTION

THIS EQUIPMENT IS NOT TO BE OPERATED BY THE SHOP UNTIL THIS PORTION OF THE TAG HAS BEEN REMOVED BY THE INSTALLATION SUPERVISOR.

Installation Supervisor To Remove This Tag When Installation Is Complete And Approved By Production Supervisor

☐ Approved ☐ Approved Except

SHOP SUPERVISOR | DATE
REMARKS

MACHINE LEVELED AND ALIGNED	IS ALL WORK ORDERED COMPLETED
SERVICE MAN INSTRUCTED SHOP	ARE ALL PARTS & ACCESSORIES ORDERED RECEIVED
EQUIPMENT TRIED OUT	GUARDS SATISFACTORY
PAINTED AND CLEANED UP	AIR, GAS, WATER, STEAM, CONNECTED
ARE ADDITIONAL FACILITIES REQUIRED SUCH AS LIGHTS CABINETS, CRANES ETC.	DOES EQUIPMENT MEET SPECIFICATIONS
COOLANT	DO LIMIT SWITCHES WORK

REMOVED BY | DATE

Send To Maintenance And Tools Section

REMOVED BY | DATE

SEND TO MAINTENANCE AND TOOLS SECTION

Fig. 9 This "Equipment Release" tag is used at Allis-Chalmers for installation of or major repairs to capital equipment. It must have the approval of the installation supervisor, the lubrication supervisor, the electrical supervisor, and the shop supervisor. This inspection includes many mechanical features of the machine as well as guarding and safety devices. It is used in conjunction with a "hold off" tag after the power has been supplied. The cards are prepared at the time the machine is ordered and at that time the people involved are advised that the equipment is expected and that their installation work and approvals will be required. The installation supervisor is responsible for placing the tag on the machine and its ultimate approval and removal. Where temporary release of a machine is advisable, the installation supervisor removes the bottom portion of the tag and notes on the back of the upper section the work yet to be performed. In that case, the approvals are also considered as temporary. Note the key check points as a reminder to inspection personnel. The remainder of the tag will not be removed until all the work is complete.

By means of this tag, Allis-Chalmers has established a procedure which prevents production personnel from operating such a machine until all approvals have been obtained. The machine is not actually ready for production until the installation supervisor has obtained the signature of the shop supervisor stating that he has accepted the equipment. The "hold off" tag and the lock of the installation supervisor are not removed until the equipment is turned over to the shop for operation.

The Safety Invaders

(from page 12)

This compares more than favorably, Mr. Gardner says, with the average monthly total of 20 such accidents and represents a 75 percent drop in such mishaps for the month.

Employees entered enthusiastically into the competition, clustering frequently around special maps posted on bulletin boards bearing pins for locations at which the balloons were found.

A few tourists also appeared to be having fun at the expense of Mr. Gardner and his associates.

This appeared certain to O-I people at Chicago Heights, who watched several balloons disappear in a southeasterly direction and noted also that the ones that were returned came from the southeast. They were surprised, therefore, to get one back that apparently traveled in a northwesterly direction: it "went" more than 2,000 miles—probably in the pocket of somebody who was driving in that direction—and bore the postmark of Alderwood Manor in the State of Washington.

Nor did the amount of time that elapsed between the release of the balloons and the return of the cards they carried have any bearing on the distance they traveled.

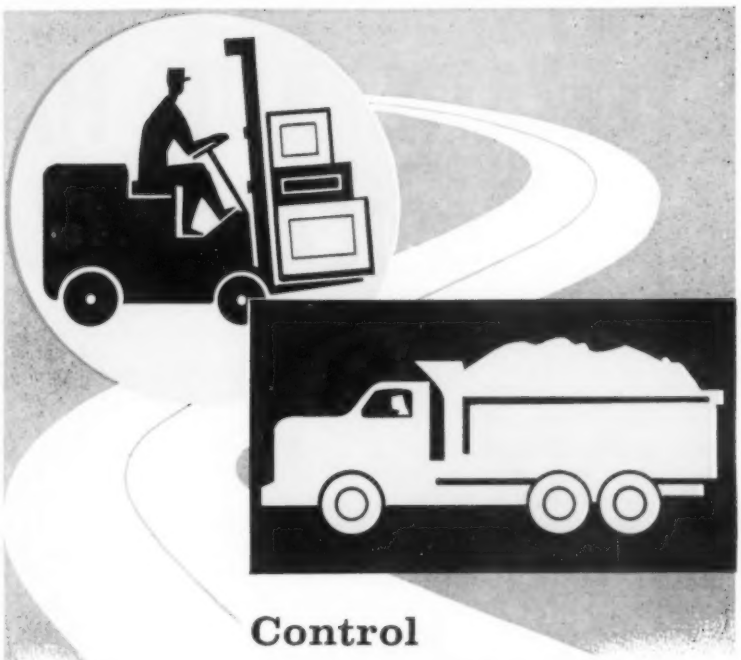
On April 30, for example, the last day of the contest, a card was returned to the Columbus, O., plant. After 30 days of traveling it had come down less than a mile from the plant.

Gas Industry Improved Safety Record in 1957

The safety record set by gas utility and pipeline companies during 1957 was the best in the industry's history, the American Gas Association says in summarizing the annual report of its Accident Prevention Committee. A. G. A. notes that 1957 was the tenth consecutive year in which the safety record has been improved.

An all-time low figure of 8.55 disabling injuries per million manhours was established last year, compared with the post-war peak of 21.86 in 1957 and the best previous record of 8.68 achieved in 1956. The Association's report is based on returns from 434 companies representing more than 95 percent of the industry's total of approximately 205,000 employees.

Gas utility and pipeline companies also registered a new low in terms of accident severity. The severity rate dropped from 652 in 1956 to 447 last year. The peak year for severity was 1947 when the rate was 1277, more than double last year's record.



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(For details, use Key # T-7 on card on page 1)

STORAGE AND HANDLING OF LUBRICANTS

by Lubrication Committee
American Petroleum Institute

The oil industry has developed a wide variety of oils, greases, cutting fluids and other process products to meet today's industrial lubrication needs. Elaborate precautions are taken in their manufacture and delivery to the user to prevent any form of contamination or deterioration. Such precautions are essential to prevent wear or other costly damage to equipment and manufactured products. The user of the lubricants must be equally careful to protect them against contamination, spoilage and improper application.

Lubricants and related products for the average small plant are normally delivered in drums of various sizes and in pails. The largest drum, of 55-gallon capacity, may be made of either light- or heavy-gauge steel, while the smaller 30-gallon, 15-gallon and 100- and 120-pound drums are made of light gauge. The 400-pound grease drum or 55-gallon oil drum is an awkward object to handle by manpower alone and can cause serious injury to workers or be damaged itself if not properly handled. The same is true in somewhat lesser degree in the case of the smaller drums.

While drums are sometimes unloaded by dropping them on old tire casings, this practice can be dangerous to employees and often results in denting or puncturing the drums and weakening their seams. Such damage limits drum usefulness and future salability and sometimes leads to leakage. This of course entails a time-consuming clean-up job and creates a fire hazard. Rough, careless handling can also deface package identification marks which can lead to misapplication of the product and result in costly trouble.

Unloading today is frequently done from trucks having hydraulic lift gates. Where these are lacking, drums can be handled by lift trucks or by skids from trucks or freight cars as shown in Figure 1. Once on the floor, drums can be moved by hand truck or power lift truck or can be rolled.

Outdoor storage should be avoided if at all possible. When packages are exposed to the weather, labeling fades and the product cannot be identified except by laboratory analysis. If proper identification is lacking, mistakes in application can occur.

Where containers are stored outside, contamination by water, rust and dirt is a common result. When drums are stored on end, water inevitably collects on the drum head, and due to the expansion and contraction of the drum contents with changes in temperature, water is sucked past the bung, as illustrated in Figure 2. Theoretically, it might be assumed that bungs and seals are tight, but experience with improperly stored drums indicates that frequently they are not.

Contamination Danger

Some oils, of course, are designed to work in the presence of moisture, but prior contamination can make them useless in service. The efficiency of some cutting and heat treating oils also is completely destroyed by any appreciable amount of water. Often, too, when drums stored on end outdoors are opened, the dirt and rust which inevitably collect on drum heads get into the product.

Another objection to outside storage is that low temperatures

THE KEY OBJECTIVE

The key objective of any system of handling lubricants, whether for a single machine, a small plant or a large concern, is to make sure that each piece of equipment gets the right lubricant, free from any contamination and at the required intervals. The profits from a satisfactory and properly carried out system are large; an unsatisfactory one is costly. Hence, every step in the system should be analyzed to see whether it offers an opportunity for contamination of the lubricant or for misapplication by careless or inexperienced personnel, thereby causing injury to equipment and products.

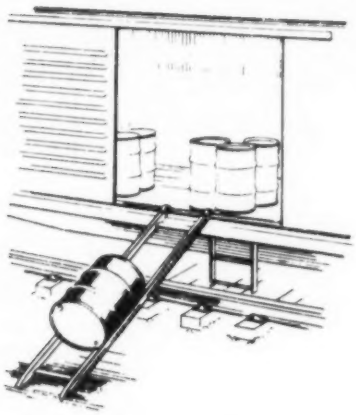

Fig. 1. (Left)—Steel skids 16 in. wide, 6–12 ft. long, are available for unloading drums from freight cars, trucks.

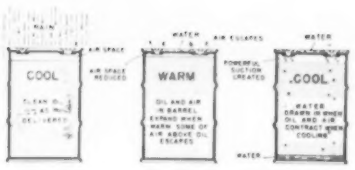

Fig. 2. (Above)—Water that collects inside chimes of drums stored vertically outdoors is sucked past bung into drum.

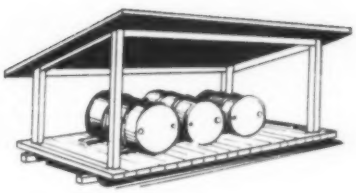

Fig. 3. (Above)—Drums stored outdoors should be on sides, bungs horizontal, unless mechanical handling equipment permits them to be stored bung end down.

make some soluble oils and compounded lubricants useless. If containers must be stored outside, ask the supplier whether there is any danger of this occurring.

If outdoor storage must be resorted to, some form of temporary shed or shelter should be provided. If this is impossible, place the drums on planks or racks and cover them with tarpaulins. Those with bungs in the drum head should be stored on their sides with bungs horizontal, as shown in Figure 3. Those having bungs on their sides should be stored on end, or with the bungs horizontal in such a way that no water can collect in the bung recess. Drums can be stored bung end down of course, but this method prevents easy identification.

Should Be Tilted

If outside and on-end storage cannot be avoided for some supplies, then the drums should be tilted slightly, as shown in Figure 4, so that water can drain away from bungs. Also, the bungs should be checked for tightness. If possible, limit outdoor storage to lowest quality products and provide indoor storage for critical products such as turbine, diesel, transformer, hydraulic, cutting and heat treating oils. The supplier's advice may be helpful in this respect.

Two problems are involved in inside storage: first, provision of a storage area in which unopened drums and other containers can be kept until needed, and second, provision of an oil house or room in which opened containers and all equipment required for dispensing lubricants can be kept, preferably under lock.

The two areas may be combined or located separately, but convenience in receiving these products and a reasonably central location for dispensing them are factors to be considered in selecting the storage area. All products should be easily accessible and stocks arranged so that the oldest material is always used first.

Drying oils, linseed oil, etc., should not be stored together with lubricants, especially in the oil room. If, by mistake, they are used as lubricants, serious trouble will occur.

Oil Room Location and Design

Dust in cement mills, lint in textile plants, coal or coke dust, fly ash and chemical fumes are all injurious to lubricants. Therefore, the oil room should be so located as to avoid as much of this injurious contamination as possible. These contaminants may originate in your own plant or in outside sources, entering your plant through open windows and doors.

Fig 4—Where drums are stored on end, with bung up, they should be tilted so water does not collect around bung.

Some petroleum products are not injured by prolonged heating, but others are. Consequently, drums and other containers should not be stored close to radiators, steam lines or other heat sources. There should be no overhead steam or water lines from which leakage or condensation can get into stored supplies.

Generally speaking, machine lubricants are not hazardous. Solvents, however, often are and since they may be stored in oil houses or rooms, these places must be designed to conform to safety regulations, fire laws and insurance coverage requirements. The National Safety Council's "Safe Practices" Bulletin gives the following advice concerning the most desirable construction of oil houses and oil rooms:

The oil house should preferably be a separate, detached building of fire-resisting construction. Containers should not be placed upon wooden racks, but upon the cement floor, or open concrete, metal or other fire-resistive frames, racks or shelves. Drums, barrels and other containers should have the caps, plugs or bungs closed at all times, except when in actual use. Empty containers should always be kept closed.

Under certain conditions, it may be necessary or desirable to provide an oil room inside a building for the storage of limited quantities of flammable liquids.

Such an oil room should have walls, floor and ceiling made of brick or concrete, 4 inches thick. All openings into the room should be provided with automatically closing fire-doors; windows should be metallic sash and frames glazed with wired glass. To prevent the accumulation of vapors in pits and other confined spaces, inside oil rooms should

not be below the grade line, nor immediately above a cellar or basement. Door openings should have sills raised 6 inches. The floor should be waterproof and also up the sides about 3 inches, making rounded corners that can easily be washed and cleaned. The floor should pitch to a drain pipe leading outside to a catch basin, or terminating at a point where proper precautions have been taken so that surrounding property will not be endangered. No drain connections should be made direct to the sewer, but through an oil separator. It is necessary to clean out the oil separator at regular intervals. Obviously, if this precaution is not taken, the separator will eventually become filled, and will then discharge the undesirable contents into the sewers. In some localities, periodical visits are made to garages to clean out oil separators.

Proper ventilation should be provided inside of oil rooms. There is no system of ventilation that is applicable in all cases; the method adopted necessarily varies with the nature of the gas or vapor to be removed, and depends on whether it is heavier or lighter than air. Ventilation may sometimes be secured by arranging suitable screened openings near the floor or near the ceiling or both. It may be necessary to provide a general system of exhaust ventilation by installing propeller fans at windows, or at other openings in the wall. In such cases, care must be exercised to prevent the exhausted gases or vapors from returning to the room, or from entering any other place where their presence would be objectionable or dangerous. Fans should be driven by explosion-proof motors, or by belt or shafting. An exhaust system with hoods, which catch the gas or vapor at the point of origin, is likely to be more satisfactory than general room ventilation.

To assist in the solution of ventilation problems, here are some of the gases and vapors that are heavier than air:

Alcohol
Ether
Naphtha
Gasoline
Benzol
Fuel Oil
Carbon Bisulphide
Kerosene
Illuminating Oils
Petroleum
Varnish
Amyl Acetate

Oil Room Space

Most small plants require only a few different oils and greases, although some may use relatively large quantities of cutting fluids. The oil room space required will depend upon how much product must be stored and handled. There must be room also for all lubrication equipment, oil wagons, large and small dispensing cans, grease guns and fittings, grease gun fillers, sump pumps, receptacles for clean and dirty wiping cloths, etc.

Fig. 5—After faucet has been set in bung-hole, drum can be easily tipped on side, rolled along on rocker type rack.

While some of this equipment takes considerable space, its storage in the oil room prevents loss and permits close supervision of its cleanliness and mechanical condition. The smaller dispensing equipment can be kept in a metal locker with doors. Sometimes it is desirable to have a small locker near machines which use special lubricants in relatively small quantities.

All dispensing equipment requires regular cleaning, for which facilities must be provided. To do this job properly, two baths of safety solvent should be provided —one for cleaning, one for rinsing. If safety regulations permit, this equipment should be in the oil room adjacent to where dispensing equipment is filled and stored.

Plants which use soluble oils and pastes often mix them with water after delivery and as required. The mixing is usually done in a drum or vat with a portable electric stirring device. This additional equipment is normally kept in the oil room. Used oil filtration tank equipment also belongs there.

Adjacent to, but not necessarily in the oil room, should be desk and filing space, where the person responsible for all lubrication can keep lubrication instructions, stock reports, work orders, and reports.

From the original containers, lubricants are carried to machinery with a variety of equipment, depending upon the nature of the lubricant, the method of application and the amount to be handled.

Starting with the oil drum, oil can be dispensed through a self-closing faucet which can be locked. After this is installed, the drum can be hoisted into a rack of sufficient height to permit filling any oiling equipment from hand oil cans to safety cans. Figure 5 shows a rocket-type rack which is a simple means of handling drums in the oil room.

A positive-delivery type pump that can be inserted in the bung of an upright drum is a convenient means of dispensing oil. It is available in hand-, electric-, or air-operated types with or without metered delivery. The hand operated design in Figure 6 prevents drip and contamination.

Where oil pumps are used, one for each type of lubricant should be provided, since it is difficult to drain pumps completely. Contamination of one lubricant with another can occur if pumps are interchanged. Each pump, therefore, should carry a label showing the product with which it is to be used.

The great advantage of delivery direct from the drum is the reduced possibility for contamination. "Highboy" containers are neat and strong but difficult to clean. Hence, in prolonged use, a dangerous amount of foreign material accumulates and eventually is picked up by the delivery pump and causes trouble. Moisture condensation is almost impossible to

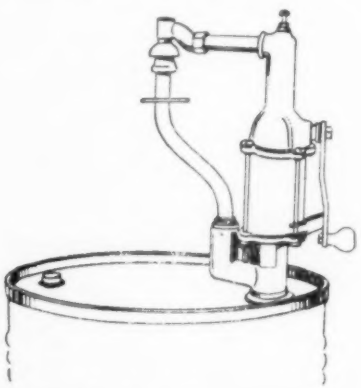

Fig. 6—Hand-operated drum pump, with closable drip return that can be swung into place when the container is filled.

avoid. Hence, if used, highboys should be provided with drains and cleaned regularly.

Dispensing Equipment for Grease

Greases are more difficult to dispense than oil. Because of their consistency they are usually shipped in open head drums and pails, and once the head is removed, the grease is open to contamination of every kind. This is more dangerous than is the case with oil because foreign materials cannot settle out of grease. Hence, drums and pails should be kept completely covered.

Semi-fluid greases can be pumped from drums into grease gun fillers and portable greasing devices. Stiffer greases, up to No. 2 or No. 3, generally can be handled by air-operated pumps, but a follower plate must be used to prevent cavitation.

Stiff grease can be handled only with a paddle, which should be metal rather than wood, since wood may splinter and contaminate the grease. Covers should be replaced immediately after removing the grease, and paddles should be cleaned so they will not collect dirt or dust while not in use.

Lubrication Equipment

For carrying lubricants from the original container to the point of application on machinery, a wide variety of equipment may be used. For oil the simplest device is the ordinary hand oil can with diaphragm bottom. More desirable is the positive-delivery pistol-type, which delivers a metered and adjustable supply. Where lubricating systems must be filled, safety cans can be used advantageously, while for handling large supplies an oil wagon with dispensing pump and hose is commonly employed.

For servicing the softer greases, hand-guns or air- or electric-operated portable equipment is available to deliver small or large volumes. Special equipment is also available to handle the stiff greases required for some applications.

To service a large number of machines conveniently and quickly, an oil wagon of some sort is essential. It should be designed to

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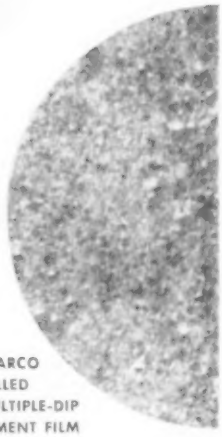

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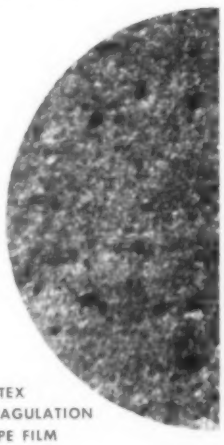

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(For details, use Key # T-8 on card on page 1)

carry supplies of each type of oil and grease required, together with the necessary oil can and grease guns. A drum for used oil should be included along with necessary small tools, a supply of clean wiping materials and containers for the used wipers. While complete wagons can be purchased, oil companies can offer designs to fit less complicated needs for individual small plant requirements.

Every container and every dispensing device should be clearly labeled with the identification of the product it is to be used with and a chart or lubrication guide should be provided to indicate the type of product to be used for each machine. Order blanks for special work, such as cleaning filters and draining oil reservoirs, should accompany the wagon. These should be prepared by the lubricator on the spot.

Sump pumps of small or large capacity, either hand- or power-operated, are available for draining reservoirs. Or a simple air-operated syphon can be made to serve the same purpose. The pump or ejector can be mounted on an empty oil drum and carried on the oil wagon along with a fresh oil supply so that a quick oil change can be made.

Filters

Oil from some types of service can be made fit for further use by simple filtration. In other cases rather elaborate equipment may be required. The oil supplier can advise what would be needed for any specific lubricant and service so that the relative costs of the new oil in comparison with purification can be determined. Lubrication engineers employed by suppliers can also be helpful in providing additional information on safe ways to store, handle and dispense lubricants.

From Small Business Administration. Illustrations by courtesy of Socony-Vacuum Oil Company.

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Eye Safety Film

(from page 13)

—and the camera shot of the nurse preparing a hypodermic as the doctor lifts a bandage from a man's face.

"Your Richest Gift," however, is not all scare. Its warning is coupled with plenty of cure—with graphic instructions on what the company offers in the way of protective devices, how they should be used, and what should be done when the eye is endangered in any way.

The new film, a 16mm sound-color production, runs nine and one-half minutes.

Prints of Film on Eye Safety Available

Copies will be available at production cost from H. V. Gardner, Safety Director, Owens-Illinois Glass Co., Toledo, Ohio.

"Your Richest Gift," Mr. Gardner feels, is the most effective deterrent to eye injury the company has tried. Better, probably, than a catcher's mask for everybody in the company. "They wouldn't wear them anyway," Mr. Gardner concedes philosophically.

Training in first aid is among main activities in an industrial nursing program. Here the Registered Nurse reviews first aid quiz with employees.

Binding injured fingers is among minor duties of industrial nursing. Here nurse applies bandage to plant worker's finger.

SAFETY — AT THE OFFICE AND AT HOME

by **MARY KATHERINE BURKE, R.N.**
Industrial Nurse
Stone & Webster Engineering Corporation
Boston, Mass.

Very few accidents that occur in office buildings are the result of work hazards. A majority of these accidents are the direct result of disregarding common sense safety rules. Accidents resulting from human error include falling on stairs, slipping on floors, and collisions with people, doors, or other objects.

One of the greatest contributors to falls of women in office buildings is the wearing of improper shoes. High heels with leather caps and waxed floors are not the best of combinations. Many turned ankles are the direct result of the wobbly sling-type heels. The wearing of sandal-type shoes with all the toes exposed may result in stubbing the sole of the shoes on steps while going up stairs, causing painful injuries from headlong falls. Many injuries can be prevented by simply using the handrails.

Leaning backwards in swivel and typist chairs, open file drawers, and objects such as rubber bands and paper clips left lying on the floors also take their toll in painful injuries.

Placing sharp objects such as broken glass, pins, and metallic objects in waste paper baskets is a dangerous practice.

Dangling telephone cords are excellent tripper-uppers. Several severe injuries have been caused by falling telephones.

Carrying pencils behind the ear is a dangerous habit, but even more so in a crowded elevator. Don't carry sharp objects of any kind into crowded elevators. Entering or leaving elevators is a full-time job and requires all of your attention. If you enter or leave the car while reading or looking back to continue your conversation, you will have an accident sooner or later.

Same Rules Apply

One thing that is well for all to remember is that the need for safety does not stop when one leaves the office; it continues to the streets and into homes. The same general rules that apply to work in the office are also applicable and just as important at home. An off-the-job accident is just as painful as the one occurring on the job, and is much more frequent.

Statistics show that home accidents cause more deaths than any of the epidemic diseases. By taking specific preventive measures, we could reduce accidents in the home as they have been reduced in industry. We can avoid most home accidents by periodically eliminating hazards around the home.

Hazards in the Home

Some of the dangers about the home are:

1. **Frayed electric wires.**
2. **Shaky stools and ladders.**
3. **Slippery floors.**
4. **Throw and scatter rugs.**
5. **Cluttered stairways—be sure there is a handrail on your stairway.**
6. **Medicines and poisons kept in reach of children.**
7. **Loaded firearms.**
8. **Smoking in bed.**

By correcting these and numerous other hazards, we can prevent the many falls, cuts, bruises, burns and broken bones that are almost daily occurrences in our homes.

Resilient Floor Problems

One of the largest surveys ever attempted on problems encountered with resilient, smooth surface flooring will provide the subjects for discussion at a Building Research Institute Conference September 17–18 at the Sheraton-Park Hotel, Washington, D. C. BRI has circulated questionnaires to more than 7,000 architects, home builders, general contractors, flooring contractors, lumber and building materials dealers, and building owners and operators in an effort to define current problems with existing flooring installations. Replies will contain data on the appearance, comfort and service characteristics of seven types of floor covering, and experience encountered with every kind of flooring system.

Returns to date show that trouble is being experienced throughout the industry with poorly finished concrete slabs as a base for flooring; with shrinkage of lumber; with movement of joints in underlayments; with popping of nails and nailheads showing through the finished floor; and with the finish materials themselves, such as scratching, indentation and high maintenance costs. Flooring contractors and installers particularly are calling for a halt to the ease of maintenance claims made by manufacturers of certain types of tile.

In addition to a series of reports by experts throughout the field of flooring design, manufacture and installation, the two-day conference will feature at the end of each day an open workshop discussion of the widespread, common difficulties pinpointed by this survey, in an effort to develop ground rules for good practice in base construction, installation of finish flooring, and maintenance.

Also in preparation for the meeting is a revolutionary document which will take the form of a chart indicating the comparative numerical values for physical properties of various types of resilient flooring materials.

Open to the entire building industry and related professions, the conference should, according to William H. Scheick, BRI executive director, set up a broad range of new guideposts to flooring.

Program and registration information may be obtained by writing Harold Horowitz, technical secretary, Building Research Institute, National Academy of Sciences, 2101 Constitution Avenue, Washington 25, D. C.

The adaptability and success of the model 27S Beacon Ray created demand for an even more powerful and more rugged warning light. The new MASTER Beacon Ray model 271 more than doubles the intensity and range of prior designs. It can mount on a 1" pipe or on a flat surface. It has a substantial cast aluminum housing and a heat resistant glass dome which houses a mechanism that rotates a single, powerful sealed-beam spot lamp. The hinged cover with single clasp, facilitates relamping and inspection. The MASTER model 271 Beacon Ray is built for real service and full dependability! The only revolving warning light with adjustable tilt-beam feature. Write for bulletin on new MASTER Beacon Ray model 271 light today.

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(For details, use Key # T-10 on card on page 1)

Safety Code Urged For Moving Sidewalks

Moving sidewalks present safety problems which could be solved by a safety code developed under the procedures of the American Standards Association. This was the consensus of a general conference of government officials, manufacturers and users held recently at ASA headquarters.

The conference recommended to the American Standards Association that safety standards for passenger conveyors be developed, and that the present ASA Committee A17 on Elevators, Dumbwaiters and Escalators develop the standards for the industry.

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey American Bar Ass'n, New Jersey Bar Ass'n, Chairman, Committee on Workmen's Compensation, New Jersey Bar Ass'n National Federation Insurance Counsel Past Commander, American Legion, Post 10, ... Newark, N. J.

FALL—Prior Injury—Causal Connection.

An employee was improperly denied compensation for an injury sustained in a fall from a ladder while he was in the course of his employment, even though the fall was caused by dizziness resulting from a previous accident, since the pre-existing disability, although a factor in causing the injury, was not the only causal factor. The claimant, a building superintendent, suffered burns on the face and ear which resulted in dizziness and loss of equilibrium when an oil burner on which he was working backfired. The following year, while still working on the same premises, but for a different employer, the claimant fell from a ladder and sustained a partial paralysis of the right leg. The court found that dizziness resulting from the prior accident was a cause of the subsequent fall, but unless the conditions of the work at the time of the second accident were to be entirely excluded from causation, the physical conditions caused by the prior injury would be treated as a factor, but not the only factor, entering into the second accident. Thus, the court held that the fall was an industrial accident since a factor in the employment, the fall from the ladder, entered into the causation.

Williams vs. Prefabricated, Inc.: New York Supreme Court, Appellate Division, Third Judicial District. No. 318. April 28, 1958.

HERNIA—Failure To Give Employer Notice—48 Hour Notice Requirement

An employee was properly denied compensation for a disability occasioned by a hernia where he failed to notify the employer of the hernia within 48 hours after its occurrence, as required by the statute. The employee contended that he did not know within 48 hours that he had suffered a hernia. The court ruled that whether he knew that he had a hernia or not, he was put on notice that something was wrong when he had the pain in the groin and especially when a lump appeared. Whether he knew or did not know there was a hernia was immaterial. The statute uses the word "occurrence" rather than "knowledge." During the 48 hours following the occurrence of the hernia the employer's supervisory employees were given no information which would have made

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them even suspicious that the employee might have sustained an injury of any kind at work, much less a hernia. Affirmed.

Buzza vs. General Motors Corp.; New Jersey Superior Court, Apellate Division. No. A-520-56. March 21, 1958.

EYE INJURY—Sparks From Acetylene Torch—Loss of Eye

An employee sustained an eye injury when sparks entered his eye causing a very slight burn and abrasions, while working with an acetylene torch. He was properly granted an award since the board was warranted in finding an accident upon the testimony of the claimant and two physicians who testified for claimant, and the board was entitled to accept the testimony of the experts who found a causal relationship and to reject that which denied it. The record showed that the burns and abrasions gave rise to infection and ulceration eventually necessitating removal of the eye. The claimant testified that sparks flew into his face and that some of them got under his safety goggles where they did not fit tightly. He said that he felt something hot hit him and go into his face and eye; and that he went immediately for first aid.

Suschinski v. Allegheny Ludlum Steel Corp.; New York Supreme Court, Appellate Division, Third Judicial Department. No. 92, March 5, 1958.

FINGER INJURY—Non-Subscriber under Workmen's Compensation Act—Contributory Negligence

An employee of a manufacturing company was granted recovery for an injury to his finger, sustained when he placed it in a vertical boring machine while attempting to clear the machine of a metal shaving, since the employer's negligence was found to be the proximate cause of the injury. The employer was not a subscriber under the Workmen's Compensation Act and contributory negligence was not a bar to recovery by the employee since the employer was found negligent in matters proximately causing the injury. The court upheld the jury's findings that the failure of the employer to instruct the inexperienced man in the use of the machine and the employer's failure to furnish the employee with suitable tools with which to remove the steel shavings from under the boring machine amounted to negligence and were the proximate causes of the injury.

W. H. Grace Manufacturing Co. v. Arp; Texas Court of Civil Appeals, Fifth Supreme Judicial District. No. 15, 364. February 14, 1958.

AGGRAVATION — LEAD POISONING — Sufficiency of Evidence

An award to the widow of a deceased employee was properly granted where the medical testimony supported the conclusion that lead poisoning, contracted by the employee while at work, was a contributing or aggravating cause of his death. The employee's duties required him to work around lead fumes and vapors which he inhaled. After being on the job for a long period of time, he developed myeloma, and soon thereafter he died. Medical testimony established that his death was caused by the combined effects of the lead poisoning and the myeloma. The court, in holding that lead poisoning contracted while at work constituted an occupational disease and was thus compensable under the Workmen's Compensation Law, ruled that the evidence was sufficiently competent to support the award. Sustained.

Barkley v. City of Alva; Oklahoma Supreme Court. No. 37, 703. March 18, 1958.

SAFETY REQUIREMENTS AND EQUIPMENT—Liability of Railroad for Failure to Properly Inspect Cars.

An employee of a consignee of lumber, who was injured while unloading a boxcar when the car door fell from its mooring, was properly granted damages against the initial railroad carrier since the carrier had failed to properly inspect the car. The record showed that there was a dent in the bottom door rail which caused the door to fall and strike the claimant on the head as he was opening it. The record further disclosed that the defect was present when the car left its place of origin and that none of the employees of subsequent carriers noticed it. The court ruled that the intervening carriers were not liable since the defect was of a latent nature and could only be found upon a detailed examination. The court further ruled that the initial carrier had the duty to carefully inspect the car, which duty it failed to perform. The court also ruled that the doctrine of "res ipsa loquitur" would not apply because the record disclosed the cause and reason for the accident and whether the carrier was negligent. The court further ruled that the judgment was to be increased from $6,000 to $7,735 since there was sufficient medical evidence to establish that the employee's unemployment since the time of the accident was due to an honest belief that his condition inhibited him from returning to work. Affirmed and amended.

Baxter vs. Texas and Pacific Railway Co.; Louisiana Court of Appeal, Parish of Orleans. No. 20, 952 March 31, 1958.

INJURY TO CASUAL EMPLOYEE—Duties of Employer

A nonsuit was properly granted against a casual employee since the evidence showed no negligent act on the part of the employer. The record showed that the employer had hired the claimant to cut some branches of trees lying on the ground in the employer's yard. The employer supplied him with a hand ax for this purpose. While cutting a branch, a chip of wood flew up and struck the employee in the eye and seriously injured him. The court ruled that there was no proof that the tool was defective or not fit for the purpose used or that the employer should have warned the claimant of the hidden dangers in the work. Affirmed.

Tellez v. Schreyer; California District Court of Appeal, Second District, Div. Two. No. 22, 524. March 6, 1958.

Symposium on Noise

How to control noise in jet airliners will be among major problems to be considered at the 9th annual National Noise Abatement Symposium to be held at the Hotel Sherman in Chicago on Oct. 9 and 10. The meeting is sponsored by Armour Research Foundation of Illinois Institute of Technology in conjunction with a number of professional associations.

Other major topics scheduled for discussion include control of industrial noise, and the reduction or elimination of noise in manufactured consumer products and appliances. Twelve or more papers will be presented by specialists in noise control and reduction during the two day meeting.

Co-sponsors with Armour Research Foundation are the Acoustical Society of America, American Society of Safety Engineers, National Noise Abatement Council, American Society of Planning Officials, American Industrial Hygiene Association, Acoustical Materials Association, and Noise Control Magazine.

Inquiries concerning the symposium should be sent to Hale J. Sabine, physics research department, Armour Research Foundation, 10 W. 35th St., Chicago 16, Ill.

Sanitation Standards for Plant Cafeteria Equipment

The National Sanitation Foundation, an independent, liaison organization, serves as a clearing house through which industry and health authorities can work together to solve some of the problems relating to the sanitation requirements of in-plant feeding operations, etc. The Foundation conducts programs in basic research such as the first comprehensive studies on dishwashing equipment and techniques. The aim of the Foundation is to use the facilities of its testing laboratory to establish standards for food service equipment. This has resulted in the issuing of the Foundation's seal of approval which manufacturers of approved equipment may apply to their products. Seal of approval identifies equipment or devices which meet high standards of sanitary significance and can be used as a guide by public health authorities.

The following bulletins are available from the National Sanitation Foundation: "Seal of Approval Listing of National Sanitation Foundation Testing Laboratory," "Descriptive Details for the Guidance of Technical and Supervisory Personnel," Standards for "Soda Fountain and Luncheonette Equipment," "Food Service Equipment" and "Spray-Type Dishwashing Machines." All inquiries should be sent to the National Sanitation Foundation, School of Public Health, University of Michigan, Ann Arbor, Michigan.

Poultry Plant Dermatitis

Management of a large poultry plant recently was concerned about a severe absenteeism problem among the women who pinned chickens. Infection was breaking out on the hands of the chicken pinners and fifty percent of the help could not report for work. As one girl recovered and returned, another was almost sure to drop out with a new case of dermatitis.

To harried management, a company specializing in skin protection products outlined a daily sanitation program that centered around a medicated liquid soap used by surgeons before operations.

The idea was novel but practical. The antiseptic soap contains 2.5% hexachlorophene, which when used regularly controls bacteria count on hands, reducing the count to as low as a 99% kill.

If the girls washed their hands each time upon leaving their benches, a thin invisible layer of hexachlorophene would remain on the skin, killing bacteria such as those causing the infection. The product also contains soothing emollients and lanolin which help keep hands soft and smooth.

The idea worked. It successfully prevented much of the infection and reduced absenteeism to less than ten percent.

Management pointed out that since the medicated soap made the chicken pinners' hands more antiseptic, the transmission of germs from their hands to the prepared chickens was considerably reduced.

Names of medicated soap and manufacturer can be obtained upon request to the Editors.

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to problems like these:

- What is the right eye protective device for each hazard . . . when should it be worn . . . how can you select for best results and greater economy? (Did you know there are more than 45 different types of goggles, each one designed for a different hazard and use?)
- What are the safety and maintenance factors of specific paints . . . the importance of the Color Code and where to use red, green, white, orange and even purple . . . who specializes in such paints?
- What are the most economical types of materials handling equipment for you?
- What is the importance of a uniform code for safety signs and signals . . . where can you find materials which will fit a planned program?
- What are the essentials for hand soaps and cleansers to protect the skin . . . the types of protective creams to prevent skin rash?
- What are the various types of electrical equipment approved by the Underwriters' Laboratories for specific conditions of hazardous gases, vapors and dusts . . . who makes them?
- What are the vapor hazards of flammable liquids . . . what fire prevention containers and equipment will do exactly the right job?
- What is the range of protective clothing, such as 70 different types of protective gloves . . . the specific merits and uses of each one—which is the very best for you?
- What can you save in time, money and production by selecting the right ladder for an operation?
- When will awards and placques speed up production?

These are just a few questions suggested by only a few pages of more than 600!

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medical programs for the small plant

by **MARGARET C. KLEM**
and **MARGARET F. McKIEVER**
Division of Occupational Health
Public Health Service
Federal Security Agency

The health of your workers is a key to greater profits in your manufacturing operations. A consistently healthy work force leads to greater productivity, lower labor turn-over rates and training costs, reduced workmen's compensation costs, and better employee morale. In-plant health programs frequently save much more than they cost every year.

In setting up your in-plant health program, it is important to get accurate information and qualified assistance. The program must be tailored to the individual business situation. Numerous sources of information and guidance are available, both locally and nationally.

What Are In-Plant Health Services?

In-plant health services are of two major types: (1) those given in connection with occupational accidents and illnesses, and (2) those not directly associated with the occupation, but provided to improve the worker's health and to keep him on the job. The first kind of service is furnished as a means of meeting the employer's legal responsibility. The second kind is offered because employers have found that it pays to maintain and safeguard the health of their workers.

The extent to which manufacturers provide health services directly related to the occupation depends mainly on the degree of hazard in the particular industry. The extent to which a manufacturer provides health services for non-occupational conditions is, however, a matter of company policy.

What Are the Advantages to Management?

Many employers have found that the reduction in worker absence, the decrease in workmen's compensation costs, the lessening of labor turnover, and particularly the improvement in employee morale, have more than paid for the cost of medical programs.

One plant, for example, saved $3,500 through reduced absenteeism in the first year after installation of a medical dispensary which had an annual operating cost of $1,700.

Another company with 300 employees reduced workmen's compensation costs from $18,000 to $7,000 per year—a 61 percent decrease—by the establishment of an in-plant health program.

In still another small manufacturing concern, compensation insurance premiums were reduced by 24 percent between 1946 (when the company introduced its medical service) and 1950. This was possible despite increased costs resulting from changes in the state workmen's compensation law.

Another advantage to management is illustrated by the experience of a plant with about 250 workers —the majority of them women—in which the labor turnover was reduced from an average of 15 per month to less than 5 per month shortly after a nurse was employed.

Where Are In-Plant Health Services Found?

According to a survey of its member companies by the National Association of Manufacturers a few years ago, less than five percent of companies with under 250 employees had arrangements for a nurse or physician to provide care in the plant at specified times. Of plants with 250–500 employees barely 33 percent had a nurse in attendance, and only 16 percent had arrangements with a physician to give care on a specified time schedule. Almost none of the plants of this size hired a physician full time.

Studies show an overwhelming lack of health services in small plants. Striking differences in the variety of services provided also heighten the contrast between small and large plants. Small companies tend to provide fewer preplacement and periodic examinations, less consultation service, and less treatment for minor on-the-job illnesses. Furthermore, in small concerns fewer plant health services are conducted by physicians.

Although health programs benefit factories of all sizes, most small plants have a more pressing necessity for such services. Statistics show that, by and large, small plants have 2½ times as many accidents as large ones, in proportion to the number of employees. A similar comparison of the general health of workers in small plants is not possible because of the absence of complete data. However, experience indicates

that workers in small plants are not in as good general health as those in large plants. Thus, it would seem that small plants have particular need for in-plant health and medical programs.

How Are In-Plant Health Services Provided?

Depending upon the size of the plant and the scope of the program, various combinations of full-time and part-time health personnel may be found in manufacturing concerns.

Large firms ordinarily have full-time physicians, nurses, and auxiliary personnel. Medium-sized plants use either full-time or part-time physicians, but generally have a full-time nursing staff. Typically, the few smaller companies offering in-plant health service engage physicians to visit the plant a specified number of hours a week. Generally, they have either full- or part-time nurses. In many instances, the full-time nursing service is provided by a visiting nurse association.

Many small plants arrange for what are known as "on-call" physicians who may be summoned to the plant whenever an emergency arises. Although their services are generally limited to emergency care, some on-call physicians also give preplacement examinations in their own offices. This sort of arrangement, however, does not permit first-hand familiarity with health conditions in the plant, or with the special problems of individual employees. Moreover, it does not make regularly available the services of a physician for consultation, diagnosis, and prevention of illness. The inadequacy of this kind of approach has been pointed up both by the Council on Industrial Health of the American Medical Association and by other occupation health field specialists.

The services of a plant's medical staff are frequently augmented by community health activities. For example, through the facilities of the local tuberculosis association or local health department, mass chest X-ray surveys are regularly conducted in many plants. Health education activities in the plant may also be strengthened by assistance from such organizations as the National Cancer Society, the National Heart Association, and similar voluntary groups.

When prepaid hospital and medical services are available, they may also be integrated with the in-plant program. Both can be particularly valuable when an employee needs hospitalization for a non-occupational accident or injury.

What Services Are Offered?

Two different kinds of services are found:

Occupational services: Under workmen's compensation laws, employers are liable for illnesses and injuries incurred by workers on the job. Consequently, some of the larger firms have found it desirable, from the standpoint of both money and time to provide complete care for minor cases. That solution has proved generally acceptable to the workers, who, under many State laws, have the privilege of selecting the physician who is to care for occupational diseases or injuries. All serious cases are, of course, treated in hospitals.

Non-occupational services: Less than 10 percent of sickness absenteeism is caused by occupational disease and injury. Many manufacturers, therefore, have recognized the value of providing diagnostic and preventive care. These services, aimed at improving and protecting the general health of the worker, tend to remove the causes of the remaining 90 percent of absenteeism.

Preplacement and periodic examinations are the heart of the non-occupational services offered in a

(Continued on page 41)

How to —

CONTROL HEARING

INDUSTRIAL NOISE SERIES
other articles July and Sept.

The purpose of this presentation is to show how various conservation of hearing programs were established in industry in Green Bay and northeastern Wisconsin and to offer a "how to do it" program which can be tailored to fit various needs.

For years the Wisconsin Manufacturers Association, the State Medical Society and the Industrial Commission have sponsored Industrial Health Clinics in several key areas. To them were invited the safety personnel, top management and interested physicians. Thus a back log of groups interested in meetings of this sort was established.

In October 1953 Green Bay's *Cause Celebre*—the case of Wojak vs the Green Bay Drop Forge—resulted in increased awareness of the problem of industrial deafness but in reality only initiated our first efforts in this field. To show how unthinking we were, on many warm summer evenings on an open porch nearly three-quarters of a mile down wind from the Drop Forge Plant the thumping of the hammers was sufficiently loud to be a topic of conversation. In other words, it was not unusual to remark about the noisy hammers at the Drop Forge but no particular interest was aroused beyond noting that "the wind was in the west again."

Noise Clinics Organized

Several industrial noise clinics were then held in Neenah, Oshkosh and Green Bay sponsored by the groups mentioned above. In addition more clinics were planned by the safety committee of the Green Bay Association of Commerce and the Industrial Health Committee of our County Medical Society and held in the city of Green Bay.

These latter groups formulated a series of plans which varied with the size of the plant, its medical and safety personnel and its location. A tentative schedule of fees was included with a preliminary report of these meetings.

Probably the best and most interesting part of these rather small meetings was the open-mindedness of the people involved and their willingness to discuss all phases of the problems presented by the various representatives of industry and medicine. In fact these meetings at the county level were most productive of immediate results and enabled us to go ahead with our planning.

In the smaller plants and those with a limited budget pre-placement hearing tests were made, consisting only of an audiogram, a graphic record of the ability to hear certain pure tones in each ear under

LOSS

To insert ear plug, draw the ear upward and backward.

by **WILLIAM W. FORD, M.D.**
Green Bay, Wisconsin

more or less standard conditions. In Green Bay these tests were made in the physician's office by a trained technician. In the smaller towns, if there was a local hospital with a room available, efforts were made to persuade the manufacturers in a nearby area to purchase an audiometer jointly and the hospital to allow a nurse to be trained in its use.

In a small city in Kewaunee county the three local physicians each purchased an audiometer and divided the testing. Admittedly in this last situation there is a rather wide variation in the techniques employed but (also admittedly) it is much better than not having any tests at all.

In Green Bay the technician sends a copy of each audiogram to the mill. Somewhere in this procedure it is examined by the otologist and a diagnosis written across the back of the card. Any abnormalities in the curve are indicated and if necessary the employee is advised to have an ear, nose and throat examination. Rechecks are also suggested but the efficiency of the follow-up varies.

Plants With Limited Medical Funds

The next type of program is followed in some of the larger mills but ones still having a limited medical budget. These mills have either a part or full time industrial nurse who, understanding the value of the program, will be responsible for the follow-ups advised at the time of the first audiogram. It has been

Case History of a Hearing Loss Problem

The follow-up audiometric hearing measurements of five employees in a Green Bay plant showed hearing losses. All five were working in noisy areas in the converting department.

Since this was the first problem of this type that had come to the attention of the company's personnel director, there was no precedent for follow-up action. The five employees had not filed or requested Workmen's Compensation claims.

The personnel director called a conference with a local engineer, the plant nurse, an otologist and an audiologist to discuss the problem. The otologist recommended that a thorough otological examination be given the five employees to see if the hearing loss resulted from or followed some condition which might not be occupational.

The audiologist held the same opinion and felt that the first step should be to find out just what the condition was in each of the cases. The hearing losses might result from different things and the record of the doctor's examination could be of value should a claim be initiated at a later date.

All angles were discussed and the following procedure was decided upon, to apply for these five cases only and not to serve as a precedent. It was agreed that the five employees should have the otological examination and that the otologist would send a report of his findings and his opinions to the plant nurse. It was felt there was no point in trying to make further plans until the results of the examinations were known. Following are the results of the examinations:

EMPLOYEE A: This man was 22 years old, single and had had three years of military service as a paratrooper. His mother was quite hard of hearing and it was felt the boy was duplicating her hearing loss. Soon afterward he voluntarily left his job and there was therefore no need for further action.

EMPLOYEE B: This man was 22 years old also and had a rather marked high-tone hearing loss. He was in the Army Reserve and was going on active duty again in three months. He said his ears were so sensitive that they would ring after "even shooting a 22" and particularly after shooting on the rifle range. He stated that his ears were still ringing after being off work four days. The otologist reported that he had rather sensitive ears but that he had already lost most of what he was going to lose and that the remainder of his hearing could be protected by ear plugs.

EMPLOYEE C: The audiogram of this patient showed a mixed type of deafness which fits with his history of repeated attacks of ear trouble with running ears as a child. There was some scarring of both ear drums and neither moved freely. This indicated old pathology and might possibly mean that he was now possessed of a sort of "built-in" pair of ear plugs; at least sound was not transmitted very readily through his middle ear.

EMPLOYEE D. This patient, age 24, had a rather marked hearing loss in his right ear for high tones. He had an aunt who was quite deaf and he had not been able to hear a watch tick with his right ear for a long time. No treatment was recommended for him other than the use of ear plugs.

EMPLOYEE E: This man had a moderate high-tone hearing loss. In military service several years previously he had operated a caterpillar and grader. At one time after flying from Japan to Korea in a flying box car his ears had rung for some time and he had been unable to hear for three days. He was working in a napkin department on a machine whose metal gears "clanged in his ears." When he returned for further study, he reported that he was now on a quieter machine which utilized felt gears and there was no more ringing in his ears.

In analyzing these five cases, not one had any significant loss in the speech range. They all had a high tone loss but none of the cases could rightly be attributed to the environmental conditions of the plant; and such a report was sent to the personnel director.

found desirable for the consulting otologist to set aside time at regular intervals to discuss the program with the nurse and visit noisy areas in the plants.

This, of course, serves two purposes, (1) to further the physician's familiarity with manufacturing processes involved and (2) to stimulate the nurse's interest in the plan. Thus it is possible to lay the ground work for further studies in the mill regarding numbers of men working in noisy areas and their exposure time.

In other mills, where the main interest is still one of self protection, that is, from the insurance standpoint, in addition to the pre-placement audiograms, a complete ear, nose and throat examination is performed at the expense of the mill and a written report and recommendation filed in the mill office.

A few of the mills have, in addition to the above, yearly general physical examinations which include a complete ear, nose and throat study with an audiogram. Frequent checks are made when an employee is in a noisy area or if there is an indication of hearing loss or unusual sensitivity. Annual evaluation meetings are held, with management, engineering, medical and safety personnel, participating. This type of program is not as common as could be desired.

To simplify record-keeping a specific sheet is used in the otologist's office. The first test is recorded as an easily demonstrated graph and space is left for recording the findings of the ear, nose and throat examination.

The history is in two parts—the first, a simple check

list of significant points as far as the ears are concerned and a record of the results of a more or less flexible questioning by the physician. A record of his previous employers and work done is as important as the history of exposure to noise or to concussion in the military service, e.g., the noise experience of a rigger on jet aircraft differs from that of a rigger in the local shipyards.

On the reverse of the sheet hearing values are listed numerically and space is available for the interval histories.

If the goal of conserving hearing in industry is sought, nothing is more helpful than frequent informal plant tours. The local otologists have been told that to understand and treat noise exposure deafness, "you must listen to lots of noises yourselves." To illustrate this point from a case history, an employee complained of ringing ears and deafness following his shift on a slasher—i.e., a circular saw and conveyor system which cuts logs into lengths acceptable to a barker.

On investigation it was found that the operator's area, while not quiet, was not especially noisy. It was decided that the individual probably just wanted a change. However, in later conversation with his foreman, it was found that the saws on that particular machine were changed daily with the diameter varying as much as eight inches. This, of course, would result in a much higher edge speed with an increase in noise level on some days.

The noise produced by most machines in industry has been recorded and evaluated. However, it is particularly true in the paper industry that individual modifications and improvements are frequently made with resulting noticeable variations in the noise level produced.

Acceptance by our industry seems to be at three different levels:

1. A few plants feel that the whole subject is better left alone. This is illustrated by some tool producers who stated "the men did not complain about their eyes until fluorescent lights were installed. If we start examining ears and checking hearing they'll all complain about that too."

2. Some plants have a pre-placement audiogram or audiogram plus ear, nose and throat examination as a purely precautionary measure so that an existing hearing loss incurred elsewhere will not be charged to them. There are no rechecks in these plants. Obviously this is not a conservation of hearing program in itself, but several of these mills have had representatives at further conferences in our valley and at the state and national levels.

The safety glass program in our valley was slow in coming into use in some of these mills. In other words, the mills lagging behind in the hearing conservation program also lagged in the conservation of vision program as well.

3. Some mills have a good pre-placement program, adequate rechecks and follow-ups and a fairly complete study as to numbers of employees in noisy areas and time of exposure.

In this third group when it is known that an employee is exposed continuously to high noise levels

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Sheergrip 0763	18"	Natural Latex	.023 (dbl)	Smooth
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(For details, use Key # T-12 on card on page 1)

a recheck of his hearing is made in 60 or 90 days. At that time if he shows a significant dip in hearing levels after being away from work for 48 hours or if he complains of ringing in his ears or as has happened occasionally, unusual irritability, the following procedure is instituted.

Following an examination in the otologist's office, the nurse and/or safety man, a representative of engineering, if possible, and the otologist will review his record and the noise survey report on his machine or at his working area.

If it is decided that this is rightly a noise-induced problem a transfer is considered to a less noisy area. This usually is impossible due to loss of seniority, lower pay and loss of prestige. An attempt is then made to quiet the machine, meanwhile the man is given ear plugs.

"The man is given ear plugs." It sounds easy doesn't it, particularly as noise levels in the majority of operations involved in industry in our areas are such that the wearing of ear plugs will reduce the individual's exposure to a relatively harmless level.

We found that it is impossible to enforce a rule stating that everyone crossing a certain yellow line must wear ear plugs.

Another attempt at enforcement was made by insisting that every worker crossing an anteroom on the way to a noisy area should take his ear plugs from a shelf in this room and put them on before he left the far door, with certain penalties if he was found without them while working in the noisy area. This plan didn't work either.

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Here is what we do now. We consider that ear plugs are our first line of defense for the individual employee's hearing and his fitting should be treated with much personal attention. The men have been told about ear plugs subtlely and posters are usually on display either on the bulletin board or in the nurse's office. Certain key personnel including the nurse and some supervisors have been familiarized with the protection obtained by wearing properly fitted ear plugs and the man's name is given to one of these people for further indoctrination. Then the man is shown a display of ear plugs usually by the nurse.

Psychologically it seems best that the employee should have an opportunity to help choose his own ear plugs; at least up to the point of fitting them.

The first step, inserting the plug is much easier if the external auditory canal is straightened by grasping the external ear and drawing it upwards and backwards. Wash the ear plugs when washing up.

It would be well for anyone contemplating such a program to try several types of ear plugs. Wear them while talking or chewing gum and while in a noisy place.

A well fitted ear plug is uncomfortably snug for a time and conversely, if too loose, annoying little leaks develop around the periphery so that the vacuum will "make and break" on chewing or yawning. The important point is how well voices can be heard in a noisy place while wearing ear plugs.

The fitting of ear plugs is the most important phase of the program as far as the individual employee is concerned. While waiting for the engineers to quiet a pump or gear box we can fit an employee suffering with ringing of the ears, or a post noise exposure deafness, with a pair of ear plugs which in most cases will relieve his symptoms and make him more comfortable at his job.

A few unusual elements contributing to the success of the program deserve mention.

• Green Bay has one of the oldest hearing conservation programs in the public schools. By the time a student graduates from high school he has had three or four audiometric tests. This means that nearly every worker examined knows a little about these tests and does not "view with suspicion" its use as a part of the pre-employment examination.

• For nearly 15 years the Children's Division of the State of Wisconsin has held hearing clinics in many counties annually. Every child with a hearing defect is examined by an otologist chosen by the county medical society from a panel endorsed by the State Medical Society.

This work is done by the panel members on a voluntary basis and it has been considered a privilege to hold these clinics. Thus because of the careful screening given all participants a group of otologists have been trained who know something of the occurrence of disabling ear conditions among our school population and who are accustomed to think in terms of conservation of hearing.

It should then be evident that a labor pool plus the availability of a relatively unselfish and conservation-

At clean-up time, employees should also wash their ear plugs.

minded band of otologists has had much to do with the smooth running of our program in northeastern Wisconsin.

• Recently a group of Milwaukee industrial physicians supplemented in part by workers from the sub-committee on noise of the American Academy of Opthalmology and Oto-Laryngology, through their research and studies both in plants and at the Wisconsin State Fair have been a considerable source of inspiration and practical help.

• The exchange of information and techniques between the paper mills on the medical and safety levels regarding the establishing of hearing conservation programs has been free and complete. Almost the only limiting feature has been inadequate medical budgets which do not fit the expanding needs of these programs.

All plant physicians and consulting otologists were agreed that the studies of hearing in the plants had resulted in no new problems. No claims have been filed as a result of this program nor has any particular unrest developed among the men in noisy areas. Of interest may be the accompanying case history. (Page 38).

The reaction of top management to the conservation of hearing programs has been varied but on the whole has been extremely favorable. One plant manager thought it was the most important of the fringe benefits that labor has obtained saying that "it would help the employees at home—even a pickle packer likes to enjoy music or hear his wife's high pitched voice." A paper mill executive stated that it was working out as a good method of improving mill-employee relations.

Favorable Employee Response

Some of the examinees questioned said they never had as thorough an examination before and a few of them even offered to pay for it themselves.

One plant engineer said that through his knowledge of the program he had been (1) stimulated to put silencers on some of his vacuum pumps. (2) He had moved an operator away from a chipper to a less noisy area and he went on to say that purchases of all new machines were made with the noise that they would make in mind. He felt that there was a good program in his plant but he said that the plant itself was not doing enough active research in noise control.

Another engineer said that he had his eyes or rather his ears opened to the problem when a draft curtain was installed around a corrugator to help retain heat. Several other machine operators around this installation, mainly girls, seemed to improve in the efficiency of their operations after the installation of this draft curtain. He went on to say that the mill had given these people ear plugs when the draft curtain was later removed with a 10 percent improvement in the efficiency of the operation.

In another plant, new equipment is installed on insulation pads to isolate the machine from the building. If objectionable air-borne noises are evident, a spun glass type of material is used. A specific problem was a band knife log cutter. After installation of spun glass material the noise was reduced to the point where it was no longer necessary to use ear plugs. However, at a later date they discovered mechanical features in the machine that were at fault. These were corrected and further reduced the hazard.

A case history in building-transmitted noise can be illustrated by what was done to a box facial cutting machine. Air-loc vibration dampening pads were used to eliminate a severe thumping noise that was being transmitted to offices on a lower floor.

This article has proposed methods of conserving the hearing of individuals exposed to noise levels which may under certain circumstances cause permanent deafness.

The methods outlined are shown to be applicable to plants of various employee populations and containing noise exposure areas of varying sizes and intensity.

From an address presented at the 45th National Safety Congress.

Small Plant Medical Programs

(from page 35)

plant. Preplacement examinations serve two purposes, wise assignment of the worker and early detection of illness. Periodic examinations provide a current health inventory contributing to discovery of disease while in its early stages.

In addition to such examinations some plants also give emergency treatments and care for minor ailments in order to help keep workers on the job. If further treatment becomes necessary, however, patients are referred to their family physicians.

Close personal contact and smooth working relationships with family physicians are important features of in-plant health programs. In addition to explaining the findings of preplacement and periodic examinations to the workers, the plant medical staff, with the workers' permission, passes the information on to the family physicians, whom the workers are urged to consult. In this connection, one of the major duties of a plant nurse should be to follow up such

referrals and encourage workers to get the needed treatment. In many instances, at the request of a family physician, various special services have been provided for a worker right at the plant.

A continuing health education program carried on in the plant can demonstrate to the workers the value of accepted health practices. Such a program inspires worker acceptance of healthful habits and willingness to obtain any necessary treatments. In the course of periodic conferences with the plant physician and nurse, advice may also be given to the workers on health matters affecting their own health and that of their families.

What Does It Cost?

Manifestly, costs vary from plant to plant, depending upon such factors as the type of industry (hazardous nature of operations); the size of the industry; the type of services to be provided; the availability of medical personnel; and the degree to which community facilities can be utilized.

The skill with which the program is designed to fit the needs of the individual plant is vitally important. By way of illustration, an insurance company executive told of a case in which a plant with 600 employees, which spends about $5,000 per year on its medical program, saved approximately twice that sum during the first year its plan was in operation. This company's plan was developed specifically for the needs of its plant. In contrast, another plant with 6,000 employees spends $47,000 per year on a medical program from which neither management nor employees derive much benefit because the program was not suitably planned and has grown haphazardly. Size alone is not the answer; individual tailoring to the particular situation often can be.

How Are In-Plant Health Services Set Up?

Large companies can afford to set up their own-in-plant health departments and to hire either a part- or full-time physician and full-time nursing staff. Smaller plants, however, generally do not find it feasible to set up elaborate full-time programs—they cost too much.

Manufacturers with less than 500 workers can best approach the problem of providing satisfactory health services through a cooperative arrangement with other plants. Several successful programs of this type have been developed. They are of two general types. Some groups of small plants jointly establish a central clinic to serve employees of all participating firms. Other groups of small plants prefer to employ a physician who serves each plant on a part-time rotating basis.

Details concerning the development of such programs, the early promotional activities; the planning for layout, needed facilities, and equipment; the employment of medical personnel; the relationship between the plants; and other administrative details, as well as figures on costs and savings, are contained in the Public Health Service Publication No. 215, "Small Plant Health and Medical Programs." Copies can be obtained for 50¢ from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

This Public Health Service publication points out that there are no 1–2–3 steps that can be outlined for the promotion and organization of cooperative health programs. A review of the plans described shows that in one instance a physician was interested in providing services to small plants and was primarily responsible for developing the program. In another case, an industrialist was convinced of the value of medical services and sold the idea to other small plants. In a third community it was the local health department which took the initiative. In a fourth, it was the local chamber of commerce which stimulated the development of cooperative health services.

There are, however, certain essentials for success in a health and medical program. Experience has proved that to be successful, a program must have:

1. The good will and strong backing of management.

2. Complete understanding by the employees of the purposes of the program.

3. The services of a competent physician who is actively interested in worker health.

4. A clear appreciation of the financial responsibility toward the program and of the services to be provided under it.

Companies interested in establishing in-plant health programs can obtain assistance both from local and from national sources.

Locally, they will find it helpful to consult the health department; the medical society, especially its committee on occupational health; the chamber of commerce; the medical school, if there is one; the council of social agencies; the visiting nurse association; and those concerns which already have medical departments staffed with a physician and nurse.

National organizations which will assist with the establishment of health and medical programs include:

Council on Industrial Health
American Medical Assn., 535 N. Dearborn St., Chicago 10, Ill.

Industrial Medical Association
28 E. Jackson Blvd., Chicago 4, Ill.

Division of Occupational Health
U. S. Pub. Health Serv., Washington 25, D. C.

Division Field Headquarters
U. S. Pub. Health Serv., 1014 Broadway, Cincinnati 2, Ohio.

Division Field Station
U. S. Pub. Health Serv., Box 2537, Fort Douglas Sta., Salt Lake City, Utah.

American Association of Industrial Nurses
654 Madison Ave., New York 21, N. Y.

National Assn. of Public Health Nursing
2 Park Ave., New York 16, N. Y.

Industrial Hygiene Foundation
4400 5th Ave., Pittsburgh 13, Pa.

State, territorial and some local governments also have divisions of industrial hygiene which can be of assistance.

From the Small Business Administration.

A three-year record of safe operation of an explosives plant was honored by Hercules Powder Company at its Port Ewen, N. Y. plant. A ceremony was held at shift change at the plant, attended by all plant employees as well as representatives of the Home Office in Wilmington, Delaware.

The plant's 570 employees have worked 5,000,000 man-hours, or 1,364 days, without a lost-time injury. They have achieved a lower injury frequency record than the combined Hercules explosives plants every year for the last 15 years.

As a reward for working safely, employees received the general manager's prizes, a selection of articles valued at $10 each from which the employees may choose. Included among these were such articles as electric skillets, automatic toasters, portable barbecue grills, and lady's fitted luggage.

• • •

Employees of the Michigan City plant of the American Cyanamid Company were honored recently in recognition of having worked for an accumulated one million man-hours—over six and a half years without a disabling-injury accident.

The outstanding record earned for employees the company's highest safety honor—the President's Safety Award.

In achieving six and a half years of accident-free operation the employees of the local Cyanamid plant have received awards from the National Safety Council, the Manufacturing Chemists' Association certificates of achievement, and the American Cyanamid "Award of Merit" and the Cyanamid "Safety Award." Marking the presentation of the President's Award, each employee was given a facsimile of the award plaque.

• • •

Jerome Lederer of New York, director of Flight Safety Foundation, Inc., and the Cornell-Guggenheim Aviation Safety Center, was honored recently as "Mr. Aviation Safety" for 1957 by the nation's aviation writers.

Mr. Lederer was presented with the first Monsanto Aviation Safety Award by the Aviation Writers Association in convention at Houston, Texas, for having made 1957's "most significant and lasting contribution to aircraft operating safety."

Presentation of the award, an 18-inch tall bronze figure symbolizing man's efforts to support flight, was made by LeRoy Whitman of Washington, D. C., editor and publisher of the ARMY-NAVY-AIR FORCE JOURNAL and chairman of the AWA-appointed nominating committee which unanimously selected Lederer for the honor.

Monsanto Chemical Company established the annual award in 1957 as a means of acknowledging and encouraging the very important progress which continues to be made in aviation safety.

• • •

The Award of Honor, highest recognition bestowed by The National Safety Council, has been presented to the Chemstrand Corporation's nylon plant in Pensacola, Fla., for its "outstanding safety performance in 1957."

It is the fifth time the Chemstrand plant has been singled out for the Award of Honor since the

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chemical textile fiber firm began operations here in 1953. In addition, the nylon plant holds the world's textile plant safety record with 17,106,185 man-hours free of disabling injuries.

• • •

The Phillips Control Corporation of Joliet, Illinois, was recently cited for its safety record by Wausau Mutual Life Insurance Company of Wausau, Wisconsin. According to a recent announcement by Mr. John W. Ayers, president of Phillips Control Corporation, his company operated for an 18 month period ending April 2nd without a disabling injury. According to Mr. George Zeigler, industrial relations manager, the achievement record is due basically to the development of safety consciousness on the part of supervisors and line workers.

• • •

An outstanding safety record has won Blaw-Knox Company's Chemical Plants Division, Pittsburgh, Pa., first place in the Five Year Accident Prevention Awards presented by The Associated General Contractors of America, Inc. The award, for the years 1952–1957, recognizes Chemical Plants Division as having the best safety record among the major contractors in Group A in the construction field. Group A includes all contractors doing over 500,000 man-hours of work annually.

In winning the award, Chemical Plants Division chalked up a record of 28,850,727 man-hours with an accident frequency rate of only 3.62 and a severity rate of only 380.0. Considering the fact that the construction field is classed as one of the most hazardous occupations, these figures are evidence of an outstanding achievement. National average figures for the construction industry compiled for the same period by the National Safety Council are, frequency rate 16.89 and severity rate 2315.0.

The philosophy of E. C. Wright, vice president, construction, is that engineering and construction must include accident prevention, not only in the finished product, but also in the ways and means of producing that finished product. How his philosophy has paid off is evidenced by the awards Chemical Plants Division has received throughout the years in its engineering and erection of facilities for every phase of the chemical, petroleum, plastics and petrochemical industries.

• • •

Three chemical companies received prized Lammot duPont Safety Awards during the 86th annual meeting of the Manufacturing Chemists' Association at White Sulphur Springs, Va. They are the United States Rubber Co., Royce Chemical Co. and the Tennessee Corporation. The awards are presented annually by the MCA to those chemical firms showing the greatest improvement in plant safety over a five-year period.

The winner among companies whose employees worked more than two million man-hours a year is U. S. Rubber's Naugatuck Division, with a decrease of 59 per cent in its accident frequency rate. Runner-up is American Potash & Chemical Corporation.

Royce Chemical Co. and the Tennessee Corporation tied for first place in the category for firms with an exposure of two million man-hours or less. Each has a 100 per cent decrease in its accident frequency rate.

Bronze plaques were presented to the winners by Ernest Hart, MCA board chairman and president of Food Machinery and Chemical Corp.

The chemical industry is one of the safest in the nation, according to the National Safety Council. The industry presently averages 3.38 injuries per million man-hours, while the rate for all industry is 6.38. The rate for days lost in the chemical industry is 37 per cent below the national industrial average.

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*FALLS ARE THE LARGEST SOURCE OF WORK INJURIES... AND FALLS TO A DIFFERENT LEVEL HAVE THE HIGHEST AVERAGE COST PER CASE OF ALL COMPENSABLE WORK INJURIES. * FROM 1957 'ACCIDENT FACTS'
SPREADER
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Greater working convenience, Greater production, Do a Better Job — Faster!
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When ordering Bo'sns Swing with wooden seat, order as follows: No. 160 with No. 161.
ROSE MANUFACTURING CO.
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(For details, use Key # T-15 on card on page 1)

Is Cleaning Wasteful?

Building cleaning is not simply a janitorial job any longer. It is a legitimate management function that has wider scope and costs much more than many of the functions management is currently spending its time on. Better management and administrative skill are needed to run a successful cleaning program, where the job is done well and where results are commensurate with money spent.

Despite this, American business management spends a minimum of time and effort on housekeeping problems and has generally allowed cleaning efficiency to lag far behind the efficiency of other endeavors.

These views were expressed by Mohe H. Solworth, president of Industrial Sanitation Counselors, at a seminar conducted by the American Management Association in New York recently. The meeting was for representatives of companies moving their office quarters.

"Cleaning budgets in most businesses run from two to ten percent of total operating budgets and the total nationwide outlay for keeping buildings and plants clean is in excess of $4 billion annually. But most cleaning programs are operating at about 30 percent efficiency because management has not been interested in improving them," Solworth said.

"This lack of interest usually comes from lack of information," he said. "Often sanitation costs run higher than costs for entire operating departments which management is interested in and keeps an eye on."

"Plans for a good cleaning program should start with plans for the building. Good sanitation design can cut the cleaning workload and save thousands of dollars annually. Good design can enable a cleaner to service an extra 5,000 square feet a day and reduce the cleaning budget by as much as one-third."

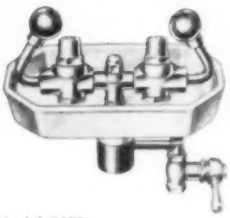
Solworth pointed out that capital investment in new office buildings was some $2.5 billion in 1957 and that a steady increase is in prospect with the figure reaching more than $3 billion by 1967.

"Good cleaning practices can provide a protection for this investment and sanitation savings can be terrific if good programs are installed and followed from the outset. Usually sanitation costs over the life of a building will amount to much more than the building's original cost but they can be reduced materially through proper planning and administration."

Industrial Sanitation Counselors is located in Louisville, Kentucky and provides consulting and design services and cost-control cleaning plans for office buildings, plants, hotels, hospitals and public buildings.

Protect Eyes

with HAWS EMERGENCY EYE-WASH FOUNTAINS



Model 8930:
Basic eye-wash model; enameled iron bowl, chrome plated brass heads. HAWS also offers eye and face wash fountains and drench showers.

Chemicals, foreign particles, caustics – all mean DANGER to eyes! Instant relief is vital! HAWS Eye-Wash Fountains flood the eyes with controlled water streams – soothing, relieving until medical aid arrives. Fool-proof operation activates fountain instantly, possibly avoiding permanent injury. HAWS Emergency Facilities are also widely used for routine cleansing of eyes as a precautionary measure. Write today for illustrated literature on HAWS complete line of emergency facilities.

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(For details, use Key # T-16 on card on page 1)

Revised Electrical Safety Standards

Major revisions and additions are included in the new edition of the American Standard for Outlet Receptacles, Attachment Plug Caps, and Appliance Plugs, published by the American Standards Association (ASA). Designated as American Standard C73.1–1957, the standard applies throughout American industry and homes wherever electrical appliances are used.

As compared to the original standard, approved by NEMA in 1936 and by ASA in 1941, the revision now includes grounding receptacles, extends grounding requirements, and requires the segregation of voltages, currents, and types of currents on the same premises. Moreover, the standard has been rearranged to facilitate the identification of different styles and sizes of caps and receptacles. The revisions conform to changes made in the American Standard National Electrical Code, C1–1956.

Revised American Standard C73.1–1957 was approved by NEMA in 1956 under NEMA No. WD1–1956, and in 1957 by the American Standards Association.

Copies of the standard are available at $1.50 each from American Standards Association, 70 East 45 Street, New York 17, N. Y.

inside the trade

GENERAL BANDAGES, INC., manufacturers of Gauztex bandages for professional and industrial use, has moved from 531 Plymouth Court, Chicago to their large, newly constructed plant at 8300 Lehigh Avenue in Morton Grove, Illinois, a suburb of Chicago. *Joseph A. Hinkamp*, president of the company, in announcing the move, said it was made for more efficient plant operation, to provide better facilities for service, and greater warehousing space for their expanding product line.

W. A. Meddick, 22-year veteran of *THE ELWELL-PARKER ELECTRIC CO.*, Cleveland, has been named its president and general manager following a meeting of the board of directors. Meddick succeeds Sheldon K. Towson, who died this spring.

At the same time, the directors announced the election of *Sheldon K. Towson, Jr.*, as vice president and assistant general manager.

Meddick joined Elwell-Parker in 1936, was subsequently named sales manager, and was named vice president in 1939. He has held both positions since that time. He is today recognized as one of the pioneers in the industrial truck field.

Sheldon Towson, Jr., has been with the company since 1956 as assistant to the president. Prior to that, he was associated with the Allegheny Ludlum Steel Corporation.

TURCO PRODUCTS, INC., manufacturer of chemical processing compounds, has elected as Vice President-Marketing *Dan T. Buist*, for the past 7 years Turco's Director of Sales. Appointed as General Sales Manager is *Archie K. Beard*, who has held various supervisory sales positions over the past 10 years. Named as Assistant to Vice President-Marketing is *Stewart B. Van Dyne*, for 7 years Administrative Assistant to Turco's Director of Sales.

John (Jack) A. Wagg has been appointed Product Sales Manager for *ALUMINUM SAFETY PRODUCTS, INC.*, according to an announcement made by L. L. Werner, Vice President and General Manager of the company.

Mr. Wagg will be responsible for and direct the national sales organization, program development, and selection of new distributors.

Also announced was the appointment of *Donald M. Werner* as Sales Engineer. Mr. Werner will assist in the sales of ALDEK aluminum scaffolds, stages and related products, and will specialize in field engineering with particular emphasis on special applications.

Headquarters for both men will be at the Executive Sales Office, in New York City.

EASTERN METAL OF ELMIRA, INC., of Elmira Heights, N. Y., is celebrating its 10th Anniversary in the manufacture of traffic signs and safety equipment with the opening of new, expanded plant facilities according to *Alexander D. Falck*, President. The extensive modernization and enlargement program, including the purchase of much new equipment, is another expression of the company's confidence in its own future and in the future of industry as a whole. John H. Knapp, Jr., Vice President Manufacturing, indicated that new plant facilities are already in use supplementing production and delivery.

John C. MacKinnon

John C. MacKinnon has been appointed Vice-President, Footwear and Glove Sales, for *THE B. F. GOODRICH FOOTWEAR AND FLOORING COMPANY*, Watertown, Mass., announced *Raymond H. Blanchard*, President of the company. Mr. MacKinnon replaces James S. Barrie who retired after 34 years service with this company.

R. D. WERNER CO., INC., with factories in Greenville, Pa., and sales offices in New York City, announces the appointment of *Harry G. Nix*, to the position of Assistant Advertising Manager. In his association with the company, Nix will work directly with Advertising Manager W. F. Aldridge and the division sales managers.

Carl E. Rowe has been appointed President of *MILWAUKEE VALVE COMPANY* it was announced by *Louis Putze*, President of Controls Company of America. In less than two years' time, Mr. Rowe has advanced from Assistant General Manager to Vice President and General Manager, and now to his new position. Milwaukee Valve Company is a subsidiary of Controls Company of America, which has its main office in Schiller Park, Illinois.

George F. Clark, vice-president-secretary of the *GENERAL FIRE EXTINGUISHER CORP.*, of Philadelphia, has been named 2nd vice-president of the Fire Equipment Manufacturers' Association.

Mr. Clark was elected to the FEMA post during a recent meeting of the group in Absecon, N. J. He is also chairman of FEMA's Sales and Marketing Committee.

The *HY-TEST SAFETY SHOE DIVISION* of the *INTERNATIONAL SHOE COMPANY* has introduced a new program to increase the distribution of safety shoes by fostering closer ties between the shoe retailer and the industrial plant managers and safety directors located in the retailer's community, according to general manager *Norman Whitsett*.

Hy-Test's 24 salesmen will continue to service their regular industrial accounts at the same time they are presenting the program to the retail shoe trade. They will call on the company's general line retail customers to acquaint them with the opportunities of selling safety shoes to local industrial and construction type industries, assisted by trained specialists.

To help implement this selling program, Hy-Test is also offering a co-ordinated advertising and sales promotion package to retailers. Heading this new department is Vince Lo Duca of the Hy-Test staff.

Safety Appointments

Thomas H. Ayers, of New York City, has become Safety Director, First U.S. Army, succeeding Eliot Parker who has been appointed Safety Director, Communications Zone, U.S. Army Europe. Mr. Ayers is a native of Petersburg, Va., and was a lieutenant commander in the Navy during World War II. After completing his Navy service he became Assistant Safety Director in the Office of The Quartermaster General, Washington, D. C., and from 1948–1949 was Safety Director for the Chief Quartermaster, Hq. U.S. Army Europe, and Deputy Director of Safety, U.S. Army Europe from 1949–1951.

On his return to the United States he became Safety Engineer in the Office of the U.S. Army Safety Director, Washington, D. C. (1951–1954); Assistant Safety Director Chemical Corps Research and Engineering Command, Army Chemical Center, Md., (1954–1956); and from 1956 until his appointment to the First Army post he was Chief, Safety Education and Promotion Branch, Office U.S. Army Division of Safety, in the Office of the Deputy Chief of Staff for Personnel.

THE FIRE FRONT

Fire Safety For VA Hospitals

Veterans Administration's Construction Program for fire protection in its hospitals is 92 percent complete, the agency announced recently.

Started in 1952, the program includes 115 projects for installation of automatic sprinkler and alarm systems, emergency exits, fire doors, smoke barriers, and other fire and safety features to protect patients in VA hospitals throughout the country.

VA said 94 of these projects, costing $4,638,000, have been completed. Work is well along on the 21 remaining projects totaling $2,475,800, with contracts already let for $1,846,700 worth of work, the agency explained.

The program was instituted to carry out the expressed will of Congress that VA hospitals of combustible construction be rendered safe from fire, VA said.

Fire Losses Increase

Estimated fire losses in the United States during May amounted to $85,633,000, the National Board of Fire Underwriters reports.

According to Lewis A. Vincent, NBFU's general manager, this $85,633,000 loss represents an increase of 8.3 per cent over losses of $79,045,000 reported for May, 1957, and a decrease of 13.6 per cent from losses of $99,061,000 for last April (1958).

Losses for the first five months of 1958 now total $491,187,000, an increase of 2.2 per cent over the first five months of 1957, when they amounted to $480,445,000.

These estimated losses include an allowance for uninsured and unreported losses.

Fire Prevention Code

Reports are received daily through the nation's press of death and destruction by fire and explosion. These occurrences are usually the result of a combination of circumstances, a common contributing factor being the improper handling and use of flammable and explosive commodities, thus showing the need for effective municipal control, warns a recent bulletin of the National Board of Fire Underwriters.

For example, fire and explosion causes the death of several persons in a midwestern state when a compressed flammable gas is liberated; a manufacturing plant in an eastern state blows up because of the lack of knowledge of the behavior of certain chemicals used; a machine shop, using a new alloy, has a disastrous fire.

The introduction of cellulose nitrate motion picture film in the entertainment world years ago produced many serious fires, until suitable laws were passed for its safe storing and handling. The many millions of gallons of gasoline in use could not be handled without catastrophies were it not for the safety provisions which the petroleum industry has thrown around this highly flammable liquid, in part at least, because of the excellent ordinance requirements established in many communities. Hazardous new chemicals and materials of various kinds and new uses of plastics are being introduced daily in manufacturing processes. Paint spraying and dipping operations, using flammable materials and solvents, have become common practice in many industries. Many plants often take work on foreign to their normal operations, and general business is frequently speeded up to increase production. Therefore proper safeguarding of industry is of vital importance at all times.

Much progress has been made in fire prevention and a great deal of effective work is being done in cities, towns, and villages throughout the country, but in the great majority of cases full effectiveness is not being obtained from the time and effort being expended upon such work. This is because of the incompleteness or entire lack of laws, ordinances, or regulations governing the numerous features which must be given consideration in fire prevention.

It is sometimes argued that there is no necessity of a city or town adopting a complete and comprehensive code on fire prevention because the town does not contain many of the hazards covered by such a code. However, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to allow them to develop unrestricted and then try to regulate them.

NBFU Fire Prevention Code

The National Board of Fire Underwriters has for many years issued information covering hazards which affect the home as well as the place of business. This is in the form of a "Suggested Fire Prevention Ordinance" first issued in 1930. A number of subsequent editions were issued, the latest being a completely revised edition published as the Fire Prevention Code, recommended for adoption by cities and towns.

For communities which feel that their needs can be cared for by a briefer code, the National Board of Fire Underwriters also publishes an abbreviated edition of the Fire Prevention Code.

Three principal methods by which municipalities adopt codes

of this kind are as follows: (1) setting forth the entire code in an ordinance, (2) adoption of the code by reference or title, (3) adoption of an ordinance specifying compliance with the code as prima facie evidence of compliance with nationally recognized safe practice. Methods 2 and 3 avoid the large cost of publishing the entire code locally.

The Fire Prevention Code contains in an Appendix a suggested ordinance providing for the establishment of a bureau of fire prevention and for adoption of the code by reference. Many cities throughout the country have adopted the code by reference.

The following wording is suggested for use in adopting the Code by the **prima facie** evidence method:

> The storage, handling and use of flammable or explosive substances and the use or occupancy of buildings or premises shall be in conformity with nationally recognized safe practice for the safeguarding to a reasonable degree of life and property from the hazards of fire or explosion.
>
> Compliance with the provisions of the Fire Prevention Code recommended by the National Board of Fire Underwriters shall be deemed to be **prima facie** evidence of compliance with such nationally recognized safe practice.

Copies of the Fire Prevention Code, or the Abbreviated Edition, may be obtained free by persons having an interest in the code as well as by committees considering local codes. Copies will be supplied on request to the board at 85 John Street, New York 38, N. Y. If you are located in the Middle West, write to 222 West Adams Street, Chicago 6, Ill., and, if west of the Rockies, write to 465 California Street, San Francisco 4, Calif.

Municipalities adopting either edition of the code will be furnished on request with up to 50 free copies of the edition that is adopted, and as many additional copies as may be desired at a price less than cost of publication. Any city or town which adopts either code will be furnished 1 to 3 sets of the Standards.

"That must be the new Fire Warden they've been talking about!"

Three Fire Films

Three fire prevention films dealing with various aspects of fire prevention are available on a free loan basis from the National Board of Fire Underwriters. All of them may be used for general showing or for telecasts.

"Before They Happen" reveals one day's drama in the life of a typical inspector for a municipal fire prevention bureau. It shows, through the work of these men, how to keep fire hazards out of the home. (16mm color and black-and-white, 14½ minutes.)

"Crimes of Carelessness" depicts the appalling loss of life and property from fire. Pictures of actual fires convey a moving message to young and old. (16mm and 35mm black-and-white, 10 minutes.)

"The Torch" is an intriguing and humorous color cartoon showing there's just a bit of human carelessness in all of us. (16mm color and black-and-white, 10 minutes.)

Because of demand for the films, each booking is limited to ten days. The films are available from the Bureau of Communication Research, Inc., 13 East 37th St., New York 16, N. Y. West of the Rockies, requests should be addressed to National Board of Fire Underwriters, 465 California St., San Francisco 4, Calif.

Home Fire Alarms May Be Worthless

Homeowners are being cruelly victimized by sellers of worthless home fire alarm systems, members of the National Fire Protection Association were told at the 62nd annual conference in Chicago. The president of the Automatic Fire Alarm Association, Cy Harriman of New York, characterizes the home fire alarm business as a "national scandal."

"It has become a rallying ground for crooks and crackpots; misrepresentation and downright fraud have become guiding sales principles; and the hapless homeowner has been victimized again and again," he said.

The uninformed American consumer, in answer to his prayers for fire protection in his home, has been given a "fantastic assortment of gimmicks, gadgets and junk," asserted Harriman. The homeowner thinks his worries about fire are all over when he buys one of these small battery-operated or plug-in types of devices, which are supposed to detect a fire and sound an alarm.

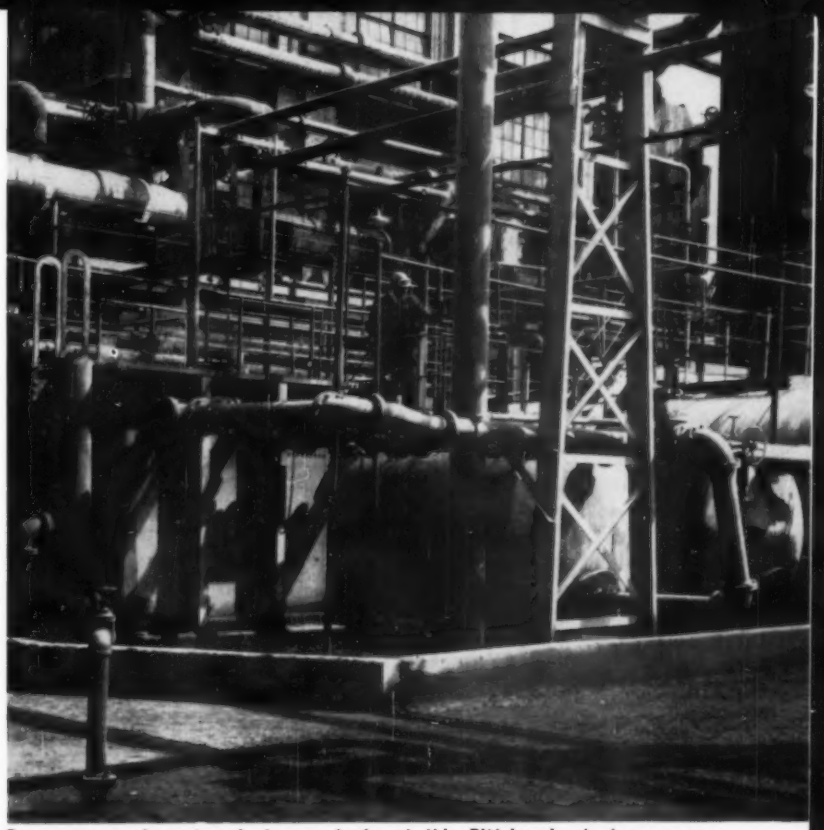
"The implication is that all you have to do is to hang one of these wonderfully inexpensive magic tin cans on the wall, and you've got complete protection for $4.98," Harriman said.

Actually the homeowner is in more danger than before, because he may discover too late that his confidence in the gadget has been misplaced.

"The sale and installation of home fire alarm systems must be regulated in a sensible fashion. This entire problem can't be thrown into the lap of the National Fire Protection Association; it is an industry problem, and it is up to the reputable members of the industry to band together and solve it."

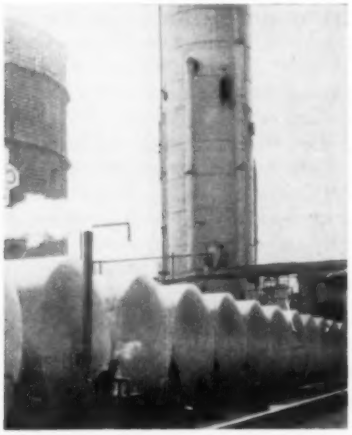
But the NFPA can help, he said, by working out standards for proper equipment in this field, and by public education. Harriman also called for fire department chiefs to be on the alert for salesmen of the fraudulent and "junk" home fire alarm systems working in their jurisdictions.

FOAM BLANKETS BENZOL FIRES



Processing equipment and storage tanks at this Pittsburgh plant are protected by a foam system. The installation includes the five individual systems subject to manual control, and a hydrant system with six foam hydrants spotted over the area. One of the foam hydrants appears in the foreground.

Installation of a special hazards foam system at the benzol plant of Pittsburgh Coke & Chemical Company, is giving the company zoned fire protection in a critical area of the Neville Island, Pa., facility. The foam system covers processing equipment and storage tanks occupying more than an acre.



Shown here are 12 of the 16 horizontal storage tanks at the plant. Mounted in a dyked area 150 feet by 50 feet, the tanks are in one of five areas protected by a fixed pipe foam system.

Twenty-eight years ago, when the original benzol plant was erected, it was almost out in the country—200 yards from the nearest building. Then gradually, as the plant expanded, the benzol production facilities found themselves surrounded with other processing equipment and buildings on the 150 acre site occupied by Pittsburgh Coke.

In this intolerable situation, the management had two choices: 1. Move the benzol plant to a less congested area. 2. Provide fire protection equipment that would meet the requirements of the insurance company and at the same time minimize the fire hazard.

Since benzol production is a vital intermediate step in the production of many of Pittsburgh Coke's chemicals, it was not feasible to move the plant. Hence the decision to equip the plant with the very latest foam system.

The installation includes five individual systems subject to manual control from the foam house, and a hydrant system with six foam hydrants located throughout the area. At these points, hose and playpipe may be attached to apply foam manually to areas not within the range of the fixed nozzle system..

Sixty-six foam-making spray head units, two tank side foam makers, and three 2½-inch playpipes are included. There are about 1600 feet of underground pipe and 2200 feet of above-ground pipe.

Protects Largest Area

The system was designed to provide at least 50 psi water pressure at any foam-making unit. It protects at one time the largest area, which consists of 16 horizontal tanks, 10 feet in diameter and 34 feet long, mounted in a dyked area 50 feet by 150 feet, plus an additional 25-foot square containing one horizontal tank. The tanks range in capacity from 20,000 gallons to 50,000 gallons.

The area requires a water flow rate of 1280 gallons per minute, intermixed with 38 gallons per minute of foam compound. To provide enough foam compound to supply

this area 1735 gallons of compound had to be stored.

Foam compound is of a type known as 3 percent low expansion, which means that three gallons of compound are mixed with 97 gallons of water to produce the foam solution. The solution is applied at the rate of $\frac{1}{10}$-gallon per square foot of surface area protected. Nearly 500,000 gallons of actual foam blanket could be produced with the quantity of foam stored. This would cover 120,000 square feet of level surface with a foam blanket 6 inches deep.

The foam compound is stored in a 2000-gallon tank located inside a concrete block foam house. It is drawn from the tank by an electrically-operated 40 gallon-per minute pump. By a system of orifice plates and manually operated valves, the proper amount of compound can be introduced into the water stream being directed to any particular area.

James Padovese, safety director of Pittsburgh Coke & Chemical, points out that a manually operated system was selected to give the desired local control over individual processing facilities.

As part of the educational safety program at the plant, every three months Mr. Padovese goes over the complete foam system procedures with all operating and maintenance men assigned to the division. Once a year the system itself is tested with water only outside the tanks and foam in the hydrants.

Prior to the installation of the foam system, the plant was protected by steam.

Pictures by courtesy of Blaw-Knox Co.

Petroleum Transportation

Highway safety and aircraft fueling problems were major topics discussed at the annual highway transportation conference of the American Petroleum Institute's Division of Transportation held in New Orleans recently.

F. G. Wilson, American Petroleum Institute director of safety, told the oilmen responsible for vehicle delivery of petroleum products that over the past ten years the industry's motor vehicle accident rate showed a downward trend. The 1956 figure is a 40 percent improvement over that of 1947.

In marketing operations, however, where most of the trucks are used, the picture is not so pretty, Wilson said. He pointed to the grim fact that motor vehicle fatalities of the petroleum industry in 1956 were 80 percent more than in 1955, and further that motor vehicle deaths accounted for 28 percent of all fatalities in the industry in 1956. However industry employees were only half as safe off the job as they were at work, Wilson told the group.

In recognition of the tremendous highway safety problem and as a partial answer to it, three American Petroleum Institute groups are preparing driver training publications for their particular needs, he said.

Wilson reviewed some of the approaches being made to impress drivers with the need for safety, including the finding that almost invariably drivers think they are "expert." Suggesting to them that they should drive like experts is likely the best approach, he said.

Jet age fuel needs pose great new problems to the petroleum industry, E. E. Lothrop, API aviation section manager, said in a discussion of hydrant fueling systems at airports, fueling by trucks and the strict requirements of non-contamination of jet fuel. Commercial jets will come into use in late 1958 and in 1959, while military jet planes are presently a great fueling problem.

Proved Very Costly

Hydrant fueling systems for jet aircraft have proved far more costly than anticipated and likely will not be put into general use at municipal airports for several years, and not even at the largest fields in the nation until 1960. Therefore, truck handling of the fuel is still very much in the picture for the foreseeable future, Lothrop declared.

Because of the tremendous volume of jet fuel to be used—about 11,500 gallons for a jetliner crossing the nation non-stop—the fueling trucks will have to have capacities of 5,000 to 8,000 gallons each with pumps that can deliver 600 gallons per minute and more.

Two of the critical problems facing the industry regarding jet fuel itself, Lothrop said, involve filtration of even the tiniest particles of rust or dirt and removal of the minutest portion of water in the fuel.

Whereas reciprocal engines were able to cope with moderate amounts of sediment and water, the aviation jet engine is susceptible to very small amounts of minute particles, Lothrop said. The very fact that the jet engine gulps four to five times more fuel per hour in-

(Continued on page 52)

Five Safety Questions For Plant Managers

H. E. Humphreys, Jr., Chairman, United States Rubber Company, in an address before the Central Indiana Safety Conference:

"Above all, the top man in any industrial organization must set the principle of safety. In my own company the principles of industrial safety are embodied in five questions which I request our plant managers to ask themselves. They are as follows:

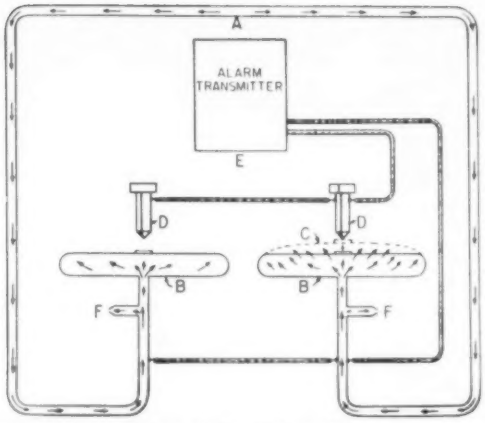
"First, am I giving to my safety program the personal attention and support which it deserves?

"Second, do I have the right man to administer my safety program and does he have the necessary capacity and my support to do his job?

"Third, does the line organization fully understand its responsibility, including discipline for violations?

"Fourth, has every employee been properly trained to work safely?

"Fifth, if a serious accident should occur in my plant tomorrow, am I confident that investigation would disclose that every reasonable precaution had been taken?"



In this type of fire alarm system, the tubing circuit (A) is installed in the protected space with both ends terminating in air chambers (B) equipped with flexible metal diaphragms (C) which, as heat expands air in tubing, bulge under the increased pressure to make contact with the posts (D) and electrically trip the alarm transmitter (E). Under normal temperature changes, air passes slowly in and out of the small breather vents (F) equalizing air pressure in tubing with that in room.

fire alarm tubing stands test of time

Specifications Written 20 Years Ago Still Meet Exacting Demands

Exacting specifications for a small diameter copper tubing for use in fire alarm systems, written 20 years ago by a newly established tubing manufacturer and put into standard production at that time, proved so far ahead of their day that they have remained unchanged to the present.

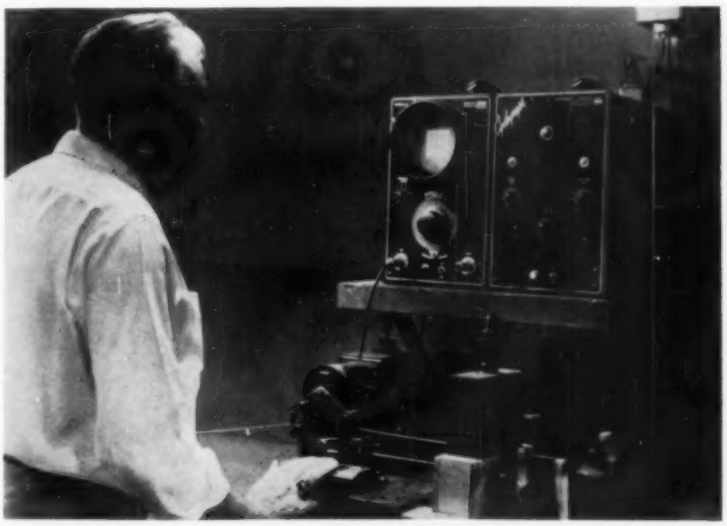
The manufacturer, Superior Tube Company, Norristown, Pa., had been in business for only a year when, with its new customer, The American District Telegraph Company, it jointly drew up specifications for the tubing.

At that time most of the company's small tubing production was nickel tubing fabricated into cathodes for electron tubes. If the manufacturer could produce to the exacting specifications required for cathode tubing, it was felt that it could meet the rigid standards required for pneumatic fire detecting tubing.

This particular automatic fire alarm employs continuous lengths of deoxidized copper tubing attached to the ceilings of areas to be protected. Both ends of the tubing connect with the detector unit. When a fire starts, the rising temperature expands the air in the tubing, creating a pressure which deflects a flexible diaphragm. This closes an electric circuit in the detector unit, which initiates the fire alarm.

To prevent alarms from normal temperature rises, small breather vents are provided to equalize the tubing air pressure with the room air pressure.

Infallible operation demands that the tubes be free of leaks which might permit expanding air to escape before enough pressure is built up to trip the alarm. The inside of the tubes must be free of any liquid or other foreign matter that might interfere with pressure



As a final precaution the joined tubing is tested with a Cyclograph while it is being measured. This is an oscillograph which discovers turn-ins, similar defects which do not show up in leak tests at mill but which may develop leaks when the tubing is bent during installation. The Cyclograph immediately shuts down the reeling machines if a defect appears, and operator quickly locates defect with a magnifying glass and removes that section of tubing.

transmission. Finally, the inner diameter of the tubing must be held to very close tolerances to assure uniform operation.

The close commercial tolerances obtainable today in tubing redraw mills were rarely found in the standard products of 20 years ago.

Since this was entirely a new item at Superior, its engineers could not give specific answers immediately. But after several production orders they knew exactly what was practical and sat down with the fire alarm engineers to draw up their customer's specifications.

The specifications imposed unusually difficult conditions on production and inspection departments. A brief description of the manufacturing process illustrates some of these.

The raw copper stock—seamless extruded tubes—is cold drawn to .080-inch OD (plus .003, minus .000) and .050-inch Id (plus .003, minus .001). Annealing is done in controlled atmosphere furnaces completely free of oxygen and sulphur. Inside and outside surfaces of the tubing must be smooth and free of all imperfections.

Single lengths of tubing—100 feet or longer—are then silver brazed into lengths of 500, 1000, 2000 or 5000 feet, as ordered. Before joining, however, each length of tubing is tested for obstructions by blowing it out with dry air or nitrogen. It is then tested for leaks at 1250 pounds per square inch minimum for a period of at least one minute. Extreme care is taken to prevent any liquid or other foreign material from entering the tubing.

Soldering is done with a brazing alloy containing a minimum of 50 percent silver. The solder flow is limited to $\frac{1}{32}$-inch. To obtain a uniform flow of solder around the tube, it is supplied in the form of a wire ring which is slipped over the joint prior to heating.

As an extra precaution, the joined tubing is tested with a Cyclograph while it is being measured. This is an oscilloscope which discovers turn-ins and similar defects which do not show up in leak tests at the mill but which may develop leaks when the tubing is bent during installation. The Cyclograph immediately shuts down the reeling machine if a defect appears, and the operator quickly locates the defect with a magnifying mirror and removes the section of tubing.

A third test is made on completed reels of tubing by introducing dry nitrogen at 200 pounds pressure in one end with an accurate pressure gauge at the other. Each reel is tested one-half hour for every 500 feet of tubing in the reel. It must show no pressure drop during that time. This test not only checks for leaks but also makes sure that the tubing has no obstructions. After testing, the ends are sealed airtight with the dry nitrogen trapped inside. The customer looks for a spurt from this trapped nitrogen when putting the tubing into use.

Before shipment, samples from each reel are sent to the laboratory for tensile tests. All splices must withstand a direct pull of 90 pounds without parting or the entire reel is rejected.

A special corrosion-resistant tubing is manufactured with special tapered joints which are the same diameter as the tubing. This tubing is then covered with a vinyl compound in a wire insulating machine. The vinyl covered tubing is used in corrosive atmospheres where the copper would be attacked if unprotected.

In addition, the company also supplies messenger type tubing. In this type, tubing is wound around a copperweld wire during the reeling operation. The wire acts as a hanger to carry the tubing and prevent it from sagging when it is installed across wide spans.

Pictures by courtesy of Superior Tube Co.

Completed reels of tubing are tested for defects by introducing dry nitrogen at 200 pounds pressure in one end with an accurate pressure gauge at the other. Each reel is tested one-half hour for every 500 feet of tubing. This is series of 3 tests made to make sure that tubing will not leak in service.

Petroleum Transportation

(from page 50)

creases the possibility of malfunctioning due to contamination.

"The fuel distribution and handling systems must, of course, reflect the aviation industry's basic principles of safety, efficiency and economy. In striving to achieve these goals, all phases of designs must be scrutinized and many of our past existing beliefs and yardsticks re-examined in the light of the characteristics of these new fuels and aircraft," Lothrop declared.

Lothrop said there is an immediate need for a standard method of sampling fuel supplies and assessing their cleanliness levels.

It is expected there will be five billion gallons of aviation gasoline used in the United States during 1958 and six billion gallons of jet fuel, with an anticipated 13 percent increase in requirements in 1959.

New Red Cross Films

A new Red Cross motion picture catalogue listing 28 films is currently available at local Red Cross chapters. Six of these films have been released within the past six months. Four of them were provided in the public interest by foundations, associations and industries.

New films appearing in the catalogue for the first time and of general interest to the industrial field are:

"First Aid" (Parts I and II): 16mm—Sound—Black and White or Color—two reels—14:24 Minutes each; Sale Price: $28.00 B/W, 80.00 Color; Loan prints in B/W only available through local Red Cross chapters.

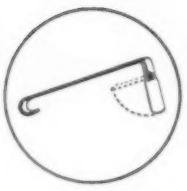
Story: This film presents the basic lifesaving and related skills taught in the recently revised (Sept. 1957) Standard First Aid course. In each sequence the stage is set by portrayal of an accident situation which poses the question, "What would you do?" Demonstrations of proper first aid care in the emergency follow. Part I of the film covers dressings and bandages, artificial respiration, shock, burns. Part II covers bleeding, poisoning, broken bones, common emergencies. This film was sponsored by the Crown-Zellerbach Foundation.

"Disaster and You": 16mm—Sound—Black and White—27:03 Minutes; Sale Price: $25.00; Loan prints available through local Red Cross Chapters.

Story: Three hundred or more times a year, rampaging nature leaves death, destruction and misery in her wake. At such times, the American people rally to the aid of the shocked and despairing victims, through the Red Cross. "Disaster and You" presents a detailed, first-hand account of the three phases of disaster operations: Preparedness, Emergency relief during disaster, Long-range assistance after the emergency. Whether it be hurricane, tornado or flood, the relief of suffering and a helping hand on the road back to normal living is the job of the Red Cross. The film made with the cooperation of actual disaster victims and includes startling disaster scenes. It was sponsored by the Radio Corporation of America.

"From the Heart of Town": 16mm—Sound—Color—13:30 Minutes; Sale Price: $35.50; Loan prints available through local Red Cross chapters.

"From the Heart of Town" is the story of the behind-the-scenes community effort which makes the periodic visit of the Red Cross Bloodmobile a success. As told by the editor of the town newspaper, the film shows how the local blood program committee goes about the serious business of recruiting blood donors, the preparation for and arrival of the Bloodmobile, and the continuing activities while the Bloodmobile is in town. Here also is shown the role of the team of science, the pharmaceutical industry in the field of blood derivatives, and the volunteer spirit of our people. This film was sponsored as a public service by E. R. Squibb & Sons, Division of Olin Mathieson Chemical Corporation.



Soft Vinyl COVER GOGGLES

***Lens is held firmly** in place by strong metal lock bar. Annealed end piece on the lock bar can be lifted with a fingertip for quick, easy lens replacement.

MODEL #440 provides all-around protection against heavy-impact, chemical splash, dust, sparks or molten metal. Soft vinyl frame form-fits any shape face. #440 is large size which fits over any prescription glasses.

MODEL #440M provides a snug fit for medium and small size faces. It supplements the large #440 to end all cover goggle problems.

For details, see your authorized EYE SAVERS supplier or write direct.

WATCHEMOKET OPTICAL CO., INC.
232 West Exchange Street
Providence 3, R. I.

Quality Eye Protective Equipment — *Made by the Leaders in Plastics*

(For details, use Key # T-17 on card on page 1)

New Driver Training Method

A new technique for teaching traffic safety to 30 students at a time without the use of an automobile was previewed in New York recently by traffic officials and educators.

The method is based on a filmstrip titled "Perception of Driving Hazards." It was developed by New York University Center for Safety Education and produced by Shell Oil Company.

The guests viewed the filmstrip as if they were driver training students. Photographs showing traffic situations that could lead to accidents were flashed on a screen for five seconds and viewers were asked to tell how they would avoid the accident.

"Perception of Driving Hazards" can be obtained free from Shell Oil Company, 50 West 50th St., New York, or Center for Safety Education, New York University, Washington Square, New York.

KEEPING UP WITH

HEAT-RESISTANT CLOTHING

A full line of heat-reflective protective clothing has been announced by American Optical Company. The new line is constructed of a new coated asbestos fabric called "Silvabestos," developed by Raybestos-Manhattan, Inc. to provide industry with a reflective-type material having greater abrasion resistance than regular asbestos. The new fabric is said to wear 168% longer. A reflective-protective coating applied to the base fabric provides protection against splash and heat transmission. The new fabric is more flexible and lighter in weight than regular asbestos and provides greater worker comfort, claims the manufacturer.

The new line includes a variety of protective clothing items. Coats provide complete protection from neck to below knees with a wool collar, snap fasteners, and double-stitched seams. Gloves have a full wool lining for extra protection and strong double-stitched seams. Pants have superior tensile strength and strong double-stitched seams, snap fasteners at front opening, duck lined waist band. Spats protect ankle and foot—with double-stitched seams, 3 leather straps, slide buckles and snap fasteners.

"Silvabestos" clothing is also available in mittens, sleeves, hoods, coveralls, and overalls, cape sleeves, leggings, aprons and bibs. The new clothing line is recommended for open hearth operations, heat treating and similar exposures. (Should not be used in contact with open flame.)

For details, use **Key # PC-1** on inquiry card on page 1.

ABRASION RESISTANT WORK GLOVES

A new Koroseal-coated canvas glove, designed for handling abrasive materials such as concrete rubble or broken brick in brick yards, tile plants, stone quarries and construction work of all types, is announced by B. F. Goodrich Industrial Products Co. The gloves are cut to assure a roomy fit and have a shell of knitted jersey for increased comfort and flexibility. Seams are located to eliminate wear that occurs when seams are exposed on the palms or the tops of the fingers. Tan opaque in color, the plastic coating also protects against acids, caustics, petroleum and mineral oils. The new gloves are available in three styles: knit wrist, safety wrist and gauntlet.

For details, use **Key # PC-2** on inquiry card on page 1.

PROTECTIVE CLOTHING DEVELOPMENTS

PLASTIC COTTON CLOTHING

M. L. Snyder & Son, Inc. has developed a new cotton sheeting coated with a yellow plastic. Garments made of this new material are coated on one side with the plastic and all the seams are electronically sealed to make them weatherproof. Pants, jackets, ¾ length coats, aprons and parkas with detachable hoods, etc., made with this new material, are claimed to be resistant to acids, alkalies, abrasion, steam, oils, paints, dyes, and gasoline, etc. The manufacturer claims that the fabric will wear like iron and always remain soft, no matter how much abuse it has to take.

Recent tests given the material by several oil companies show that it can be cleaned with either a soap, a strong detergent or solvent and still retain its durability. Further, it has been stated, the oil refineries like the cotton sheeting because it presents no static danger. Material is suitable for clothing to be used in the petroleum, mining, chemical, canning, construction, railroad and fishing industries.

For details, use **Key # PC-3** on inquiry card on page 1.

NEW VULCANIZING PROCESS WATERPROOFS SHOES

A new method of shoe construction molds soles to silicone treated upper leather to waterproof footwear. Announced by the Dow Corning Corporation, the new vulcanizing process eliminates the seam between sole and upper, making it impossible for water to seep through this vital area. Upper seams are also sealed with a self-vulcanizing rubber to prevent leaks. Sylflex provides waterproofing without affecting the natural porosity of the leather.

This silicone treatment for leather is applied in the tanning process and penetrates all through the leather, surrounds the individual fibers in the leather without clogging the pores and allows leather to "breathe."

In waterproofing demonstrations of shoes run by Dow Corning in cooperation with leading shoe manufacturers a special machine, which simulates the flexing of the shoe in walking action, was used. The treated shoe went through 22,000 flexings (10 hours) in two inches of water without a single leak. Shoes are available from the Safety First Shoe Co.

For details, use **Key # PC-4** on inquiry card on page 1.

WELDER'S CLOTHING ABSORBS ULTRA VIOLET

Although harmful ultra-violet rays are a safety problem in all types of arc welding, it is even a greater threat in the inert gas welding method now being employed on a wide scale. To meet the problem of this exposure the Singer Glove Mfg. Company has introduced a new line of safety clothing called the "Black Beauty" line. The leather used is a specially tanned split cowhide, extremely soft and pliable, and about one-half the usual weight. The lack of bulk brings greater comfort to the worker. The protective color, a dull black, is said to offer unusually good protection against ultra-violet rays.

The garments, which are packed in Polyethylene bags, include cape sleeves, jackets, bib aprons, leg aprons and sleeves. Made of the same black lightweight leather, Singer also offers a complete line of welders' gloves.

For details, use **Key # PC-5** on inquiry card on page 1.

NEW FIRE-FIGHTING SUIT

A new aluminized asbestos fire suit which is said to offer full protection to the wearer, even in direct flame, is announced by Safety Clothing and Equipment Company. This new suit, which consists of a helmet, jacket, trousers, shoes, mittens and carrying case totaling 23 pounds, is extremely pliable and easily donned in less than two minutes' time, the manufacturer states. Constructed with two basic inner linings of neoprene treated fiberglass cloth to serve as a vapor barrier, the suit also features a one-inch layer of fiberglass insulation bonded to aluminum foil, plus an outer layer of 3-M aluminized asbestos. The manufacturer states that this new fire suit, equipped with a self-contained breathing apparatus, has been fully tested in oil fields and by fire departments. It has been used at temperatures of over 2000° F for four-minute periods in JP-4 jet fuel, hydraulic fluid, lacquer thinners, dope and other flammable liquids.

For details, use **Key # PC-6** on inquiry card on page 1.

NON-SLIP WORK GLOVES

Thousands of tiny non-skid plastic dots embedded in a new Riegel fabric are the secret behind Riegel's new "Mighty-Grip" work glove . . . a tough, feather-light industrial glove that provides a good grip without sweating hands or tiring fingers. Every square inch of the inexpensive glove contains 300 tough little dots, permanently molded right into the cloth. Laboratory tests show that all the abrasive wear is absorbed by the dots, with little or no wear of the fabric itself. The dots are made of special plastic that grips smooth surfaces, bulky objects and small, odd-shaped parts with equal ease.

The new Riegel glove is extremely comfortable because the strong, tear-resistant fabric is light in weight and flexible. And because the fabric "breathes" between the dots, it permits rapid evaporation of perspiration.

For details, use **Key # PC-7** on inquiry card on page 1.

STREAMLINED ALUMINUM HELMETS

Some oil field workers are trading in their old-fashioned wide brim safety hats for new streamlined aluminum helmets. The new caps are less likely to be blown or knocked off in restricted areas or in the wind. This new petroleum workers safety helmet, the "Shorty," made by the E. D. Bullard Company, like modern military helmets, is lighter, only 10 ounces complete. Across the crown are three high ridges that develop a girder-like margin of strength and increase impact protection. These caps are available in six fade-proof colors so they may be color-keyed to a company or job. Headband assemblies are easily adjusted to any size head and float freely inside the shorty cap allowing air to circulate.

For details, use **Key # PC-8** on inquiry card on page 1.

COATED FABRIC GLOVES

Granet's new "Granflex" line claims to offer a new concept in coated fabric gloves. Never before could you get a complete line of soft interlock lined gloves that afford maximum finger dexterity and resistance to abrasion, snagging, oil and solvents, says the manufacturer. For information on the ultimate in comfort, wear and hand protection write to: The Granet Corp., or use **Key # PC-9** on inquiry card on page 1.

NEW GLOVE IS IMPERVIOUS TO ACIDS AND SOLVENTS

Development of a new industrial glove that is completely impervious to strong acids and solvents is announced by the Surety Rubber Company. Fabricated from Dupont "Teflon," and tested under the severest conditions, the gloves were unaffected by attacks of fuming

red and white nitric acids. 100 per cent sulphuric acids and all strong solvents. They are available in 12 and 16 inch styles that feature the exclusive "Surety Turn Cuff" for maximum protection.

For details, use **Key # PC-10** on inquiry card on page 1.

PERFORATED WORK GLOVE

A new, "air-conditioned work" glove is being offered by Edmont Mfg. Co. to meet the problem of nuisance hand injuries and breakage where workers refuse or are reluctant to wear "hot" gloves. Normal hand action forces cooling air through the perforated back of the glove, yet tests prove that dirt admission is low. Both the air-conditioned model and the unperforated glove are made of vinyl-impregnated fabric that provides a positive non-slip grip, is lint-free and washable, yet low in cost.

Available in men's and women's slip-on style and in men's driver's style with elastic inset.

For details, use **Key # PC-11** on inquiry card on page 1.

TWO NEW MODELS ADDED TO GLOVE LINE

The Pioneer Rubber Company, manufacturers of Stanflex industrial gloves, has announced two new additions to the popular line:
(1) A knit wrist, fully-coated glove in women's sizes.
(2) A new, longer (14½-inch) fully-coated gauntlet for men.

Both models were added to meet the demands of industrial users who found the liquid-tight gloves suitable for protecting workers' hands against the dangers of abrasion or injury from contact with harmful substances. Each glove has a coating of tough, wear-resistant Pylox (TM) over a lining of knit

jersey. The vinyl Pylox coating protects the gloves against tears, snags and punctures as well as deterioration from oils, caustics and acids. The gloves are shaped to give ample finger freedom while the specially-tapered gauntlet cuff adds to the comfortable fit. Single seam lining eliminates many of the annoying irritations caused by seams rubbing against the palm, etc. Among the many applications recommended for these Stanflex gloves are handling sheet metal, pipe, clay and concrete products, bulk chemicals or lumber, grinding, painting and trucking.

For details, use **Key # PC-12** on inquiry card on page 1.

FULL-FOOT SAFETY SHOE

Three independent steel plates overlap up the front of this new safety shoe to extend steel toe protection to the entire forepart of the foot. "Floating Bridge" over the ball joint flexes with the foot, permitting normal walking comfort—has extended wing to protect small toe area. Balljoint and instep shields have a tough, vulcanized Neoprene coating that resists severe abrasion. Instep shield buckles over the lacing—cannot be removed from the shoe. Heavy-duty, oil-resistant Neoprene-Cork outsole and heel provide excellent skid-resistance, maximum service in the most gruelling conditions. For yard gangs, riggers, drillers, construction crews, truckmen, any man handling heavy materials, this new design offers the first dependable protection above the conventional steel toe, in the form of a regular work shoe. Available in widths D and E, sizes 8 to 13; Stock No. 1518, from Lehigh Safety Shoe Company.

For details, use **Key # PC-13** on inquiry card on page 1.

ROCKET FUEL COVERALL

For protection against rocket fuels, as well as acids, alkalies, oil and chemicals, both in liquid and powder form, the Olympic Glove Co., Inc. is offering a heavy gauge coverall, made of clear vinyl. The compounding of the vinyl may be varied specifically for maximum resistance to specific service conditions. Construction features include double wrist protection. The inner sleeve is elasticized at the wrist and covered by a loose-fitting over-sleeve. An elasticized fit secures the ankles. A one-piece crotch-to-neck zipper is protected by a wide vinyl snap flap. To maximize air circulation while maintaining full protection, a cape back, vented underneath, is provided; also, the arm pits are vented and flap covered. This coverall may be used together with gloves and/or helmet and/or spats or boots to meet particular hazards. Other new developments from Olympic include a one-piece yellow coverall for light-duty maintenance work and disposable paper clothing.

For details, use **Key # PC-14** on inquiry card on page 1.

LIGHTWEIGHT INDUSTRIAL RAINCOAT

A "light but tough" industrial raincoat, weighing about half as much as conventional raincoats, is announced by B. F. Goodrich Industrial Products Co. The two and one-half pound coat is made of Neoprene-coated nylon fabric to assure exceptional tear resistance. Colored a high-visibility yellow, the new raincoat is offered as a companion garment to the company's work suit and is available in standard sizes, 36 to 46 inclusive.

For details, use **Key # PC-15** on inquiry card on page 1.

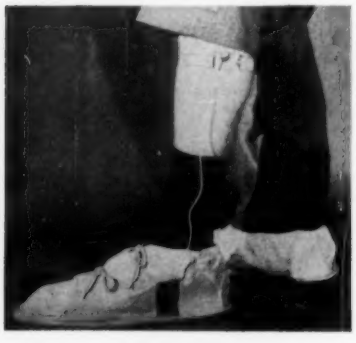
IMPROVED CONDUCTIVE BOOTIE

A new improved version of the Legge Conductive Bootie is now being made available to hospitals, industrial and munitions plants, fuel depots, warehouses and chemical laboratories. Worn comfortably over any shoe, this spark-proof Bootie assures drainage of static electricity from skin to conductive floor.

Worn over ordinary shoes, the new ankle-height Bootie is cooler to wear than older models which covered a portion of the lower leg. Positive skin to floor contact is maintained by a snap-on elastic garter assembly with contact plate.

According to the manufacturer, Walter G. Legge Co., Inc., the inexpensive Bootie is easily laundered, thus eliminating the nuisance of assigning individual pairs. Suitable for both men and women, it comes in four sizes.

For details, use **Key # PC-16** on inquiry card on page 1.



WATERPROOF SAFETY SHOES

A revolutionary method of shoe construction that keeps workers' feet dry in the worst weather is used in an 8" steel toe safety boot, the Iron Age "Sta-Dri." Not only is this boot completely insulated against freezing temperatures, but the upper leather is "Sylflex" tanned to prevent water penetration. These two features combined with a construction that seals all stitching holes with a waterproofing compound assures dry comfortable feet. Manufactured by H. Childs and Co.

For details, use **Key # PC-17** on inquiry card on page 1.

STATIC & LINT FREE, MOISTURE-ABSORBENT CLOTHING

Two principal limitations of synthetic safety apparel are overcome in a new line of specially treated Dynel and Dacron protective clothing introduced by Milburn Co. Impregnated with a lasting antistatic finish, they offer wearing comfort, repel lint and dust, are not affected by chemicals, etc. The static-free Dacron apparel is expected to find application in research and pharmaceutical laboratories, hospitals, delicate compounding operations, and in the petroleum, chemical, paint, missile and ordnance industries where corrosive and flammable fumes, lint, dusts or liquids may be encountered.

A principal source of workers' resistance to synthetic safety garments has been their minimal moisture absorption. This is overcome by the hygroscopic action of the new finish, which absorbs moisture from the wearer's skin to the surface of the fabric, where it is evaporated—eliminating such complaints as clamminess in humid weather, or clinging or climbing up on the wearer in hot, dry weather. Milburn's new lines in anti-static finished Dynel and Dacron will include lab coats, coveralls, and shirt and pant combinations.

For details, use **Key # PC-18** on inquiry card on page 1.

NEW CONSTRUCTION FOR SAFETY HATS

A new suspension for the "M-S-A Skullgard" now makes it almost impossible for the wearer to adjust it in an improper, unsafe manner. The new "fixed crown" consists of a dual suspension within the hat. One suspension, which is permanent, assures the wearer of at least one and

one-fourth inches for safety clearance, while the other one can be adjusted for the wearer's comfort. Mine Safety Appliances Company developed the new dual suspension, which meets all Federal specifications. It is said to offer six major features: fixed crown clearance, easily inserted and removed locked-in liner, elimination of pressure points, air cushion effect, extreme ease of size adjustment, plastic composition for cleanliness and long wear. Four wide snaps have a positive spring steel lock-in catch, which permits easy removal of the suspension, but prevents accidental detachment. The grey sweatband is supported by four plastic web cradle straps which form the new fixed-crown suspension. The complete assembly is mildew-proof, acid-proof and oil-proof, as well as easily sanitized.

For details, use **Key # PC-19** on inquiry card on page 1.

REVERSIBLE HOT MILL GLOVES

To double the wear of hot mill gloves, David's Gloves, Inc. has developed a patented two-thumb, reversible glove of double-thickness canton flannel that cushions against rough materials and insulates against heat. The extra thumb on the reverse of each glove tucks away under a strap when not in use. Called "Twin Palms," the gloves are said to be so designed that the comfort factor is retained whether worn on the right or left hand. The manufacturer recommends wearing each set of palms through the second ply, and then changing back and forth until the gloves are completely worn out.

For details, use **Key # PC-20** on inquiry card on page 1.

PLASTIC SAFETY HAT

The "Life Guard" all plastic safety hat for electrical workers meets all Edison Institute requirements. It resists over 20,000 volts. By also passing Federal Specification tests for construction workers' hats, it offers superior safety margins to workers in both trades. The comfortable headgear has strength and flexibility to cushion impact, and a soft sweatband all around. The headband instantly adjusts to marked hat sizes 6½ through 7¾. A hat and a cap are offered, both in white, yellow and grey. Nonmetallic chin straps and winter-liners are available. Units can be purchased from Jackson Products.

For details, use **Key # PC-21** on inquiry card on page 1.

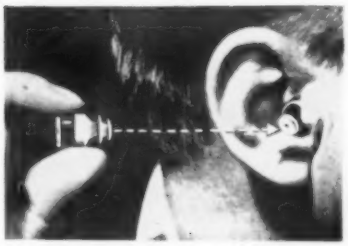
NEW COATED GLOVES

A complete new line of Neoprene, vinyl plastic and rubber coated work gloves has just been introduced by the Industrial Glove Div. of Riegel Textile Corp. The Neoprene gloves are recommended wherever heat, snagging or cutting are a danger. The fully-coated

vinyl plastic gloves are effective against oil and offer protection against solvents and abrasives, superior finger dexterity, and improved hand comfort.

For details, use **Key # PC-22** on inquiry card on page 1.

Lee Sonic **EAR-VALVS**
Eliminate the HARMFUL Effects of NOISE to The EAR DRUMS . . .



A FREE 30 Second Demonstration will PROVE this BEYOND QUESTION We GUARANTEE THAT! Remember they are NOT EAR PLUGS! They are scientifically developed sound controls that protect the ear drums without interfering with normal conversation or sound. We'll gladly send you a pair for actual demonstration. THEN you will find out why they are recommended and used wherever NOISE is a HAZARD and a deterrent to normal production. Send for your demonstration pair TODAY on company letterhead. No obligation to purchase.

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(Use Key # T-18 on Inquiry Card on page 1)

BRAND NEW!!
STOCK SAFETY EMBLEMS

A distinctive Award Button for your Safe Driver or No Accident employee.

Available from stock from 1 year through 25 years. 1 or a 1,000. Appropriately enameled.

	585D	58NA
Gold Plate	$ .95	$ .92
Sterling Silver	1.35	1.30
Gold Filled	1.50	1.45
10K Gold	4.25	4.00

Set with synthetic Sapphires, Rubies, Emeralds, White Sapphires at $1.75 each additional.

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(Use Key # T-19 on Inquiry Card on page 1)

THE POSITIVE
LADDER SAFETY DEVICE

CLIMBING MADE SAFE!
If climber starts to fall, device locks in a notch automatically, instantly. Holds securely. Limits fall to 7 inches.

PREVENTS DEATH AND INJURIES
— FROM FALLING

AUTOMATIC, POSITIVE. Will instantly catch and hold workman if he starts to fall, **even if unconscious.** Requires no attention from climber; he climbs in normal manner. Inexpensive. Easy to install; 3 men can clamp it to ordinary ladder in few hours. Clamps to any rung ladder, peg ladder, pole or framework. No welding or cutting. Notched rail hot-dipped galvanized. Entire equipment rust and corrosion proof. Can be kept free of ice by applying heat inside the carrier rail. In use approx. 10 years. Approved by Safety Engineers and Govt. Agencies throughout country. Patented. Manufactured only by

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BURBANK, CALIFORNIA

(Use Key # T-20 on Inquiry Card on page 1)

IF

If everyone had a health checkup every year, cancer's toll could be cut.

Your doctor would have a chance to detect cancer at an early stage, when chances for cure are more favorable.

See your doctor. Soon.

And give generously to the American Cancer Society. Now.

Fight cancer with a checkup and (a check

AMERICAN CANCER SOCIETY,

CHEMICAL RESISTANT CLOTHING

Controlled PVC-impregnated clothing and aprons that combine light weight and unusual flexibility with excellent chemical and abrasion resistance have been introduced in the United States by Jomac Inc. The clothing and aprons are manufactured by Jomac-North, Inc., a company recently organized by Jomac Inc. and by James North Sons Ltd., London, England.

Made with a fabric base coated on both sides with specially formulated plastic, North PVC (polyvinyl chloride) clothing and aprons resist

chemicals and solvents of virtually every type. These include acids, alkalis, fats, greases, oils, alcohols, petroleum products and waxes. The aprons have found extensive use not only in the chemical industry but also in the food and drug processing industries where ease of cleaning is important.

Seams are sewn with chemically-resistant synthetic thread. Clothing seams are then shielded and welded electronically for added strength. The welding seals the seams so that they cannot be penetrated by liquid. Clothing is provided with electronically welded plastic buttons unless otherwise specified. This provides a non-conductive garment. Coated work gloves with the same resistant features as the clothing are also available.

For details, use **Key # PC-23** on inquiry card on page 1.

HIGH VISIBILITY YELLOW RAINWEAR

A new line of rainwear is announced by Industrial Products Company. Rainwear is available in

cotton and nylon, coated with a high-visibility yellow neoprene. Jackets, pants, three-quarter and full length coats, hoods and hats are available. Garments are full cut to be worn over regular clothing. The new rainwear may be laundered, scrubbed with soap and water or dry-cleaned.

For details, use **Key # PC-24** on inquiry card on page 1.

SELF-ADJUSTING CHAIN INSTEP STRAP

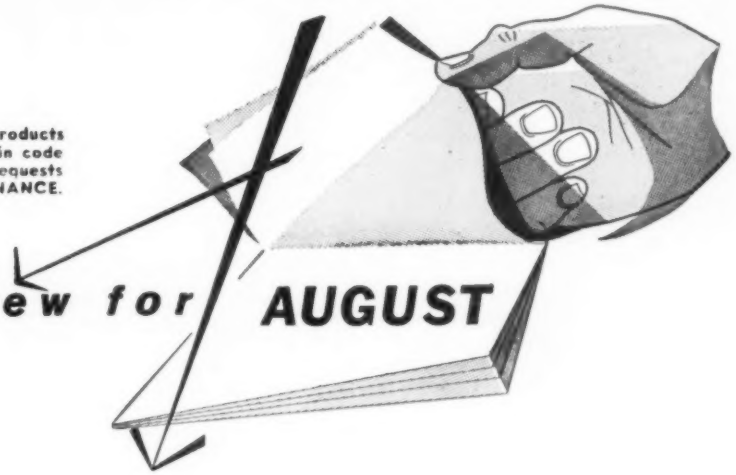
Wheeler Protective Apparel, Inc. announces a new feature incorporated in its line of industrial leggings. This development, a spring tension instep chain, will mean comfort and safety for the industrial worker. The instep chain strap readily adapts to any size shoe and

eliminates the nuisance of adjusting conventional instep straps. More importantly, the chain instep strap positively positions the flare on the top of the shoe where it will give maximum protection, according to the manufacturer. The chain instep strap does not hamper the quick release feature of Wheeler leggings, and it is designed to remain effective throughout the life of the legging.

For details, use **Key # PC-25** on inquiry card on page 1.

Material appearing in this section is published as information and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

To obtain descriptive literature of products listed, use Reader's Inquiry Card. Write in code number given each item. Send written requests to: Service Dept., SAFETY MAINTENANCE.



what's new for AUGUST

SPLASH-RESISTANT CHEMICAL GOGGLE

(Use Key # 824 on Inquiry Card on page 1)

A NEW SAFETY goggle for protection against splash, spray and impact exposures, recommended for use in the chemical industry and where humid conditions prevail, is announced by American Optical Co. The goggle is indirectly ventilated—no vents in frame or holes in lens for splash-resistant safety. It is said that tests prove this goggle twice as fog-free as similar goggles. The goggles frame is molded from non-irritating and non-toxic clear vinylite plastic. Frame has been designed to fit over all personal and safety prescription glasses. One-piece lens is made of impact-resistant acetate and is said to conform with high safety and optical standards. Lens is available in clear or green. The new goggle is lightweight, comfortable and provides wide angle vision. An all-rubber headband holds goggle firmly in place. All parts are replaceable, hence goggle is easy to clean and sterilize. No metal parts.

NON-SLIP FLOOR COATING

(Use Key # 825 on Inquiry Card on page 1)

POLY-KOTE, a new polymer product of the resin emulsion type, has been announced by Hillyard Chemical Company. The new material may be maintained by buffing. Heavy traffic areas can, therefore, be patched and blended without unsightly build-up. In releasing "Poly-Kote," the company stated that its frictional coefficient is actually higher when the floor is wet with water than when dry. Its chemists say that this feature, plus a high resistance to water-spotting, make the new product ideal for areas where spillage or tracked-in moisture is a problem.

NEW HAND-LIGHT FOR REPAIRMEN

(Use Key # 826 on Inquiry Card on page 1)

A POWERFUL hand-light for repairmen and technicians, is announced by Carpenter Mfg. Co. The light is of rugged aluminum construction with a high-impact plastic lens which makes it ideal as a portable light subject to constant use and the punishment of tool box or truck storage. It clamps to standard 7½ volt battery-packs. An addition to the well-known "Portalite" series, the F-5P illuminates five times the area of smaller hand-lights. A three-way switch permits use as mile-range searchlight for such outdoor applications as antenna or transmission line work or as a dependable worklight. Complete specifications are available from the manufacturer.

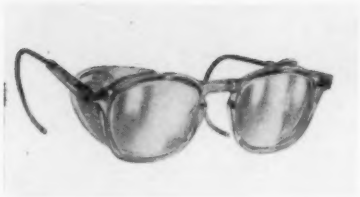
NEW MIST COLLECTORS

(Use Key # 827 on Inquiry Card on page 1)

TORIT MFG. Company, designer and manufacturer of industrial dust collectors, is introducing a new line of mist collectors for wet machining operations. The mist collectors use no high voltage electronic equipment and combine economical design with high-efficiency performance, the company reports. Three models are designed for use in wet machining operations with automatic screw machines, tool grinders, surface grinders, centerless grinders, air foil grinders, electrolytic grinders, thread grinders, etc.

Among the advantages cited by Torit engineers for the mist collectors are: elimination of toxic mists that imperil employees' health; reduction of plant maintenance costs and improvement of visibility; elimination of slippery floors; reduction of fire hazards from flammable or explosive mists and vapors; conservation of coolant; etc.

Mist collectors collect the mist-laden air at the machine and filter it by passage through spun glass filters. Filter panels last for months under regular operating conditions and can be replaced by removing hold-down screws and lifting off side panel screens. The collectors are designed to stand on the floor, to be mounted on walls or to be suspended from ceilings or overhead beams.



NEW PLASTIC FRAME SAFETY SPECTACLES

(Use Key # 828 on Inquiry Card on page 1)

IDENTIFIED AS the No. 7000 Series, a new family of plastic frame, square eye lens, flash and grinding safety spectacles is now being introduced to the market by Glendale Optical Company, Inc. They are designed for extra strength and heavy duty to assure maximum protection against frontal hazards and, where side shields are provided, to deflect hazardous flying particles. The series is available in three styles: type F-7048-2 with green lens and side shields for flash protection, type 7048-1 with clear lens and side shields for chipping and grinding, and type 7048 with clear lens and no side shields for normal frontal hazards. All are available with choice of spatula or cable temples; eye sizes 44, 46, 48 mm; and bridge sizes 20, 22, 24, 26.

PORTABLE DRINKING FOUNTAIN

(Use Key # 829 on Inquiry Card on page 1)

A NEW PORTABLE drinking fountain has been announced by the Industrial Products Co. It supplies clean drinking water to all locations where permanent facilities are not available. Insulated, stainless steel tank has a four-gallon capacity. Outer tank is constructed of galvanized steel to maintain water temperature within ten degrees for twelve hours in the hottest weather. An extra large filler opening at the top can accommodate ice, if desired. Water flow pressure is maintained by a few strokes of a built-in pump. Unit is available for use by electrical and gas crews, road and bridge gangs, construction workers, maintenance crews, mine workers and others who must work in the field.

ALUMINUM ROOF COATING

(Use Key # 830 on Inquiry Card on page 1)

A NEW, special pigmented aluminum roof coating has been introduced by The Monroe Company, Inc. Officials of the firm state that this new building maintenance product, called "Asbestolite M-44," offers many advantages; greater roof coverage characteristics, longer lasting protection, improved building appearance, minimized roof maintenance, lower under-roof temperatures and improved air conditioning efficiency.

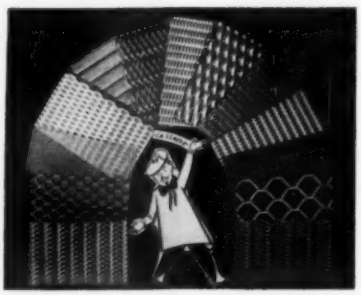
Field tests indicate that the coating performs with equal effectiveness on felt, tar paper, gravel or composition roofs, pitched or flat. On metal roofs, this new coating is said to prevent rust and stop corrosion. Formulated from top-quality asphalt and waterproofing oils, long Canadian asbestos fibers and pure metallic aluminum flakes, it withstands extremes of heat or cold, resists sunlight, weathering, acid and alkali atmospheres, adheres firmly to roof surfaces, is unaffected by expansion.

When the coating is applied, its aluminum flakes rise to form a reflective insulating "shield," permanently bonded to the roof surface to turn back up to 71% of the sun's heat. The insulating features of "Asbestolite M-44" stop condensation due to wide variations between in-building and roof top temperatures. The coating is easy to apply, comes ready to use, requires no heating, thinning or mixing. Coating can be applied with a roofing brush or squeegee, or sprayed on.

MULTI-DESIGN EXPANDED METAL

(Use Key # 831 on Inquiry Card on page 1)

DESIGNERS METAL CORP. has perfected tool designs making possible the manufacture on a production basis hundreds of expanded metal patterns. Some patterns make it possible to manufacture two or more characters or designs within a single pattern. These vary in appearance in openings from 1/16 inch to as large as 1½ inch and can vary in gauge from .015 up to as heavy as 12 gauge. This greater variety in design and types of metal makes it possible to offer large volume users of expanded metal an exclusive pattern for application to a particular product in a special industry for product identification. Also DEMCOR engineers have perfected a method of manufacturing light gauge meshes in coil form so that the raw material can be processed through slitter lines and automatic shears for mass production application. Manufacturers are finding this helpful in cutting costs.



PORTABLE WARNING HORN

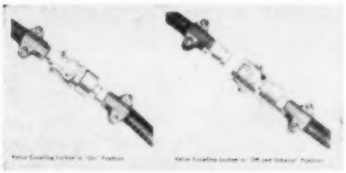
(Use Key # 832 on Inquiry Card on page 1)

MANY OPERATIONS, such as cleaning of chemical and petroleum tanks, tank cars and other equipment, have been made safer with a new, non-electric warning horn developed for use throughout the processing industries. This new unit can also be used to assure that the timed shut-off of pumps and other equipment functions properly. Personnel entering dangerous vapor areas set the timing mechanism of the portable unit to a pre-determined "safe" period. The timer is manually reset as often as required while danger exists. In the event of incapacitation, a charge of Freon (or other) gas is automatically released to activate a powerful diaphragm horn that instantly alerts personnel over a wide area. A locking device inactivates the unit. The new safety device has its own power supply and is safe for use in hazardous vapor areas. Manufactured by Falcon Alarm Co., Inc.

NEW STERILIZING AND CLEANING AGENT

(Use Key # 833 on Inquiry Card on page 1)

RESEARCH LABORATORIES of The Penetone Company have developed a new germ-killing agent reported to have excellent detergent properties as well. Known as PC-6, it provides the clean, sterile areas needed by restaurants, hospitals, hotels, motels, all public buildings and industrial plants, especiallly food handling and pharmaceutical. The agent has a high phenol coefficient of 6, yet has high cleaning ability. A phenol coefficient of 6 means 6 times the germ-killing power of carbolic acid. Even when diluted with 120 parts water, it retains its potency.



NEW SAFETY VALVE COUPLING

(Use Key # 834 on Inquiry Card on page 1)

INTRODUCED BY C. B. Hunt & Son, Inc., manufacturers of air and hydraulic control valves and pressure specialities, these new "Quick-As-Wink Valve Couplings" are said to give the operator complete control of the air line. They are designed to permit line air to be shut off and tools changed safely at any point.

After connecting the jaws of the valve half around the shoulder on the connection half, the operator advances the knurled brass sleeve to "On" position. This permits line air to flow to the air operated tool. Turning the sleeve to the right locks both the coupling and the valve in "On" position. An easily replaced "O" ring in the steel nose piece of the valve half is sealed against a recess in the nose piece of the connection half by line pressure, assuring a leakproof connection, yet permitting free swiveling of the coupling.

Returning the knurled brass sleeve to "Off and Exhaust" position exhausts the air in the tool to the atmosphere automatically and safely; traps the line air in the sleeve; and permits the jaws of the coupling to be opened. Turning the knurled sleeve to the left locks the valve in "Off and Exhaust" position and prevents the valve from being opened accidentally.

NEW PRESSURIZED DRY CHEMICAL EXTINGUISHERS

(Use Key # 835 on Inquiry Card on page 1)

ONE OF THE MOST effective extinguishing agents known, dry chemical powder, has been combined with the fast action of pressurized squeeze-lever construction in two new sturdily-constructed, high-capacity extinguishers by the Fyr-Fyter Division of The Fyr-Fyter Company. The new models contain 20 and 30 pounds of non-toxic and non-freezing powder. Fanning out in a 60° arc from the discharge nozzle, the powder travels 15 to 20 feet to the fire source. It absorbs heat, permitting the operator to work in close for a more advantageous position, and turns into a fire-killing gas. As a non-conductor, it is recommended for electrical fires (Class C) and is excellent for flammable liquids (Class B). Both units are U.L. rated at 20-B, C. The operating pressure of 150 psi can be maintained for long periods, so annual recharging is not required, and pressure is easily read from the built-in gauge, claims the manufacturer.

EXPLOSION-PROOF SEALING CORD CONNECTOR

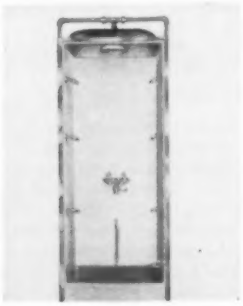
(Use Key # 836 on Inquiry Card on page 1)

THE LATEST ADDITION to the CG Series of cord connectors manufactured by Crouse-Hinds Company, provides for sealing the cord on portable equipment for use in hazardous locations. The sealing compound is poured when the connector is installed. A wire ring holds the cord in the compound, which hardens to create an effective seal. The clamping nut has an integral cord clamp which assures positive locking action on the portable cord, preventing accidental withdrawal from the connector. The connector is available in sizes to fit cord from 1/4" to 1 3/32" in diameter.

DECONTAMINATION BOOTH

(Use Key # 837 on Inquiry Card on page 1)

ALL EMERGENCY safety facilities operate instantaneously when a contaminated victim jumps into this new Model 8600 decontamination booth, according to its manufacturer, Haws Drinking Faucet Company. The unit is a one-piece fiberglass shower stall with the following emergency safety facilities: drench shower unit, that sends a sudden torrent of water down on the victim and washes away acids or other injurious materials; eight body spray nozzles that do a complete drenching job on every part of the body; eye-face wash fountain that allows the victim to cleanse both eyes and his complete face with clean water at controlled pressures. These Haws safety facilities are activated by a large platform treadle that comprises the entire floor of the stall.



TWO-TONE SAFETY SPECTACLES

(Use Key # 838 on Inquiry Card on page 1)

TWO-TONE S-7 shape plastic safety frames in black or brown combined with clear plastic are modern and good-looking. Available with matching color spatula or cable temples. Also available with the original and exclusive "Flat-fold" side shields which attach permanently to the temples to permit folding flat. Four eye-sizes and five bridge sizes with fixed or adjustable nose pads makes it easy to fit all employees. Style and colors for both plano and RX wearers. Lenses in hardened glass or optilite in plano or to prescription. Decorative safety crosses on each temple readily identify these good-looking frames as safety eyewear. The entire safety spectacle meets Federal Specifications. Available direct from manufacturer, the United States Safety Service Co.

TIRE PRESSURE INDICATOR

(Use Key # 839 on Inquiry Card on page 1)

DESIGNED TO save costly time both on the road and in the shop and control truck tire wear, a new product, "No-Lo Tire Pressure Indicators," is now being marketed by the Frebank Co. These inexpensive indicators screw on the valve stem of each tire to act as miniature pressure gauges. Drops in air pressure are indicated automatically when the red tip of a pressure control rod slides back into the valve where it cannot be seen. As long as the air is at a safe level, the red rod remains visible. The units are factory set for a pre-determined air pressure based either on the recommendation of the tire manufacturer for the particular tire size and load factor or for any setting specifically desired by the purchaser. The indicators are 1" long, 7/8" in circumference, and weigh 1/6 ounce each. The indicator rod operates up and down actuated by a stainless steel calibrated spring device. Close tolerance and capillary action prevent foreign elements from entering the actuating chamber of the indicator. Installation is simple. Precision sealing is accomplished by specially compounded neoprene seals.

SALT TABLET DISPENSING UNIT

(Use Key # 840 on Inquiry Card on page 1)

A NEW "Anti-Fatigue Station," is being offered by Medical Supply Company at the regular price of dispenser-packaged impregnated salt tablets. The unit is said to combine these advantages:

1. New (patent pending) plastic disposable dispenser, which locks out moist air and fumes.
2. Salt tablets, impregnated to dissolve gradually and supply salt at a steady rate as the body needs it, well below the stomach's tolerance.
3. A worker-education placard for display alongside the salt tablet dispenser.

Because the new dispenser is made of transparent plastic—it not only reduces the waste and nuisance of moisture deterioration, but allows visual check of the tablet supply. It's available in 500- and 1,000-tablet size. Both can be mounted in the plant or on vehicles. Worker-education placard serves as a continual reminder of the reasons workers need salt tablets when perspiring freely. Simply worded, graphically presented instructions tell workers how to use "Controlled-Action" tablets without worry about stomach upset.

SLIP RESISTANT PLASTIC FLOOR COATING

(Use Key # 841 on Inquiry Card on page 1)

A NEW, NON-SLIP, plastic floor coating that can be buffed repeatedly to renew its glossy finish is announced by The Garland Co. Known as "Plastic Dura-Brite," the material forms a skid resistant shiny finish that protects wood, linoleum, concrete, asphalt tile, rubber tile, terrazzo and cork floors. It can be immediately returned to its original luster by buffing. The coating is nearly clear in appearance and won't discolor or change the shade of any floor. In addition, it won't water spot. It is recommended for use on floors in schools, gymnasiums, offices, libraries, churches, skating rinks, etc. Spreading rate averages 1,500 square feet per gallon. Available in 1-gallon cans, 5-gallon pails, 55-gallon drums.

NEW 360-DEGREE BEACON LIGHT FOR EMERGENCY VEHICLES

(Use Key # 842 on Inquiry Card on page 1)

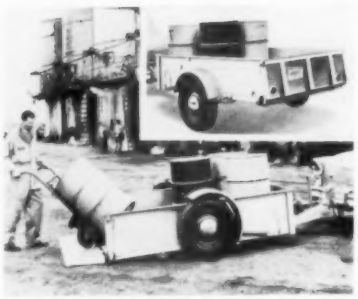
A NEW, 360-degree warning beacon which provides an unusual, off beat flash effect has been designed by Federal Sign and Signal Corp. to enable official emergency vehicles to reduce the increased hazards of operating in high speed or in heavily congested traffic. Federal created the new emergency beacon to aid in clearing a path through today's heavy traffic for official emergency vehicles such as ambulances, snowplows, highway maintenance trucks, and utility company repair vehicles.

Four intense sealed beam spotlights are used in the new safety signal. The added lamps permit slower rotation which lengthens the time each beam is seen, producing a more effective flash both day and night in all weather conditions. Seen by the motorist or pedestrian, the off beat flash pattern is said to be more attention-compelling than the steady rhythm of conventional warning signals. Specially engineered heat resistant glass domes cover the lamps and are available in red, green, blue, amber, or clear white. All moving parts are enclosed within the light's dome and chrome skirt.

ELEVATING CARGO TRAILER

(Use Key # 843 on Inquiry Card on page 1)

AN ELEVATING trailer for all-purpose cargo handling that lifts its own load in 40 seconds, has been announced by Magline Inc. Introduced under the name "Trailevator," the new unit has a hydraulically operated bed which lowers to receive load at ground level, then lifts and locks into hauling position. Engineering features include: patented load leveling device to compensate for non-uniform load distribution.



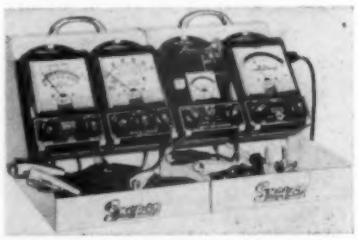
Independent wheel suspension and dual leaf-type springs provide shock-free over-the-road cargo hauling. Tailgate forms heavy-duty loading ramp as well as secure box closure. According to the manufacturer, the new trailer need not be detached from towing vehicle for loading or unloading. Bed will hold for loading at any level, from ground to hauling position. Rated at 2000 pounds capacity, with ample safety factor, unit is of all-steel construction and weighs 960 pounds.

NEW ENGINE AND ELECTRICAL SYSTEM TESTING SET

(Use Key # 844 on Inquiry Card on page 1)

DESIGNED FOR accuracy, portability, and ease of use, a new set of engine and electrical system testers is now available. Any mechanic with a minimum amount of instruction can use this equipment and obtain accurate readings. Each tester has a minimum number of adjustments and connections. No outside power is required.

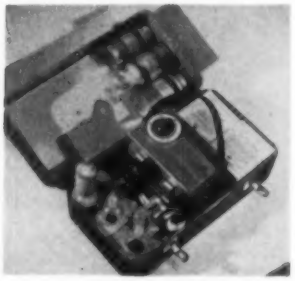
Consisting of a generator-regulator tester, tach-dwell meter, ignition analyzer, exhaust gas analyzer, 2 tune-up meter racks, and a roll stand, this set of testing equipment is extremely portable. Each meter rack holds two testers in position. The base of meter racks have compartments for storage of leads, adaptors, etc. The generator-regulator tester handles all cars and most trucks in use today. Combination tachometer-dwell meter designed for use on 6, 12, and 24 volt systems does the jobs of a tachometer and a cam angle meter. The exhaust gas analyzer is designed for use on either gasoline or liquid petroleum (LP) type engines having a single exhaust pipe. This unit accurately checks the air-fuel ratio for economical engine operation and the proper carburetor setting. Manufactured by the Snap-On Tools Corp.



GAS OPERATED AIR SAMPLING KIT

(Use Key # 845 on Inquiry Card on page 1)

AN AIR SAMPLING kit that occupies a cubic foot of space and uses a small can of liquefied gas as its power source is available for measuring lead concentrations in air. Although designed specifically for use in gasoline blending plants handling tetraethyl lead antiknock additives, the instrument is expected to have wide safety applications in other industrial areas where lead contamination of air is a problem. Known as "Uni-Jet" Lead-in-Air Analyzer, the sampling device and accompanying analytical equipment are marketed by the Union Industrial Equipment Corp.



Weighing only four and a half pounds, the unit includes a charcoal trap, impinger, and the pump or aspirator. The latter works on the venturi principle, with power furnished by a Du Pont "Freon" propellent, a nonflammable, nonexplosive, virtually nontoxic and odorless liquefied gas. A carrying case contains comparator tubes, a Hellige comparator instrument, and supplies of reagents. Total weight of the air sampler and the analysis kit is only 18 pounds.

When the liquefied "Freon" is permitted to expand into a gas through the aspirator, measured samples of air in the test area are drawn into a glass scrubber containing an iodine solution. Any lead in the air is absorbed in the iodine solution and retained as lead iodides. The iodine solution then is exposed to a reagent in the comparator tube and reduced to a colorless iodide which, when shaken with a chloroform solution of dithizone, reacts to form colored complexes. The concentration of lead is determined by comparing this color with a disc of permanent glass color standards in a Hellige comparator, calibrated to read in micrograms per cubic foot, based on a two cubic foot air sample.

IMPROVED MULTIPLE SAFETY LOCK-OUT

(Use Key # 846 on Inquiry Card on page 1)

ELECTRICAL MAINTENANCE and repair crews can be spared needless injury and employers costly damage to equipment with this improved "Multiple Safety Lock-Out" which prevents any power source from being thrown on while men are working on the line. Of new design and construction, the 2-piece unit is held in functional position by an impact extrusion method which is claimed to be superior in performance.

Manufactured and distributed by Dayton Rogers Mfg. Co., the device is a practical and proven safety precaution. Whenever two or more men are working on the same line or circuit, up to seven padlocks can be so used that the power source cannot be thrown until the last man removes his padlock. Suitable for time switches, transformer houses, switch and fuse boxes, safety valves, explosives storage vaults and restricted areas where power sources are controlled, they are sold on a trial basis without obligation.

AUTOMATIC SASH CONTROLS FOR LABORATORY FUME HOODS

(Use Key # 847 on Inquiry Card on page 1)

ONE OF THE most vital focal points in every laboratory is the fume hood. Now Laboratory Furniture Company, Inc., manufacturers of "Steelab" laboratory equipment, makes available its complete line of fume hoods with "automatic 3-Way safety sash controls."

The chemist simply approaches the fume hood, with both his hands possibly holding glassware or a heavy hot plate, and the sash opens automatically. As he walks away, the sash closes. A simple step-on, step-off activation of the mechanism frees the chemist's hands entirely for handling the chemicals and instruments used in his test. A pushbutton control unit, located on the right molding panel, provides a manual-electric control so that the chemist can ease the safety sash up or down to any desired fixed position. The stop button on this panel can be used to stop the sash instantly at any point. In the event of emergency or power failure, the third or manual control is provided for moving the sash quickly in either direction, with power on or off. Other important advantages of the new Controls include its minimum exhaustion of air conditioned room air, and the handling of any size single or multiple safety sash.

NEW SHATTERPROOF MIRRORS

(Use Key # 848 on Inquiry Card on page 1)

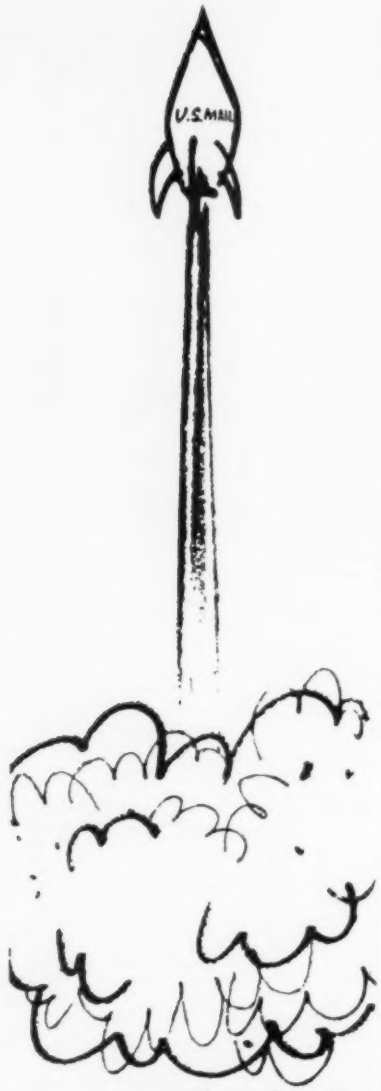
NEW PLASTIC mirrors, produced by The Homalite Corp., provide important advantages whenever safety and permanence are factors for consideration. Made of a thermosetting plastic, mirrors have high impact strength and scratch resistance, are resilient and lightweight, will not shatter. Silver backing applied to the plastic gives a distortion-free reflection which will not oxidize or chip off.

The mirrors do not craze or become brittle at low temperatures. Important physical properties at 25°C. include flexural strength: 8000 to 10,000 psi; modulus of elasticity in flexure: 2.5 to 3.3 psi x 10^5; compressive strength: ultimate 22,-800 psi; impact strength: 0.3 to 0.4 ft. lb. per in. izod notched.

ONE-MAN BULK MATERIALS CONVEYOR

(Use Key # 849 on Inquiry Card on page 1)

ONLY ONE MAN is needed to load, weigh, transport and discharge bulk materials with a new, low cost, bulk scale conveyor manufactured by Suttle Equipment Corp. Called the Model No. 1200 "Eze-Move" bulk scale, this 1000-pound-capacity conveyor can accurately measure bulk materials. Equipped with an accurate Fairbanks-Morse scale, a hopper with an 18 cubic foot capacity to handle from 500 to 1000 pounds of various materials, this conveyor bin is electrically welded of heavy 14 gauge steel with sloping sides to provide gravity discharge. The Scale moves easily on 10-inch rubber-over-steel wheels and 6-inch roller bearing swivel casters. The dump gate is 8 x 10 inches in size, and is controlled by an extension handle at the rear. The controls are within easy reach of the operator.



zone mail indeed results in speed

The Post Office has divided 106 cities into postal delivery zones to speed mail delivery. Be sure to include zone number when writing to these cities; be sure to include *your* zone number in *your* return address — after the city, before the state.

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SEND THIS PERSONAL SAFETY MESSAGE TO EVERY ONE OF YOUR EMPLOYEES.

- Safety is made appealling . . . vivid . . . engaging . . . colorful!
- Each worker clearly sees how safety benefits him . . . how doing his part helps others!
- You get enthusiastic safety cooperation instead of tolerance . . . from every employee . . . every month!

. . . talks the worker's language!

YOUR IMPRINT HERE!

packed with pictures, alive with animated cartoons, touched with humour that gives snap to your message, it makes safety interesting and down to earth. Twelve times a year it covers accident hazards. Across the nation leading industrial firms state it's the only safety paper their employees will read . . . and take home to their families.

It gives the employer the advantages of personal contact . . . saves time and expense. One "lost time" accident prevented . . . more than pays for the yearly cost! Try it . . . it works!

YOUR SIGNATURE HERE!

Make Your Safety News your own publication . . . your good will ambassador . . . working for you toward better industrial relations. If you wish, your facsimile signature can be printed here to identify you with the message that gets next to your men and boosts morale.

NOTE: *Your Safety News* is designed to promote better employer-employee relations. Every item is carefully weighed and tailored to this viewpoint!

INSIDE PAGES
(Pages 2 and 3)

THOUGHTLESSNESS IS A THIEF
He'll steal his way into what you're doing, distract your attention and walk off with a finger, arm, eye or foot. Thoughtlessness takes many forms. It may be daydreaming, or worry about some personal problem, or just plain inattention. Anything that distracts you, especially around machinery, is a thief of your personal safety.
PLAYFULNESS IS A PIRATE
He is a deceptive rascal. His hi-jinks may put him in the spotlight, but his practical jokes and shewing-off often result in serious bodily injury and even death. And note this: he, himself, has lost a leg! As so often happens, horseplay can boomerang and the practical joker gets hurt too!
What You Should Know About Carbon Monoxide
This is a picture of carbon monoxide gas!
That's right, you can't see it. It's colorless, non-irritating, tasteless, practically odorless, but also deadly.
Here are the symptoms of carbon monoxide poisoning. First, a tight feeling across the forehead, followed by headache, throbbing temples, weariness, weakness, dizziness, nausea, loss of muscular control, increased pulse and breathing. BUT if the concentration of the poison gas is high, there may be loss of consciousness without these warning signals.
Just a few breaths of air containing 1% carbon monoxide can be fatal . . . as can one part of carbon monoxide in a thousand parts of air when breathed for 90 minutes.
It is possible for carbon monoxide to leak inside of a car if there is a loose exhaust pipe or manifold connection, blown-out exhaust gasket, cracked exhaust manifold, or leaky muffler. Play it safe.
1. Be sure your muffler and exhaust are in good condition (they can last long before they become noisy).
2. Always keep a car window open, even a little, for fresh air
AN INTIMATE LOOK AT FOUR VILLAINS
SAFETY LAZINESS IS A SIMON LEGREE
If you are lazy about safety rules, then accidents will have the whip hand. We are safety-lazy when we don't bother to use mechanical guards, to take time to get the right tools for the job, to wear protective equipment such as goggles, hard hats, safety shoes, respirators, gloves, etc. Yes, Simon Legree has a whole pack of accident hounds to trail you.
HAZARDOUS METHODS ARE A HOLD-UP MAN
This villain, unsafe work habits, likes to lie in ambush for the unwary. But how do we fall into bad working habits? It may be by trying to cut corners, by wanting to keep to the old way of doing things, or by over-confidence. It's hard for anyone to believe that an accident can happen to him. It's easier to make excuses to ourselves for ignoring safety rules, but ebbits only lead us up a blind alley with an accident waiting in ambush.
Two Excellent Reasons
For Wearing Safety Shoes

EMPHASIZES SELF INTEREST

Your employee's self interest in his own safety is always emphasized. Constant safety consciousness is promoted by covering household hazards, transit to and from the job and on the job caution against accidents.

CLEVERLY ILLUSTRATES THE POINT

Artwork is carefully chosen to lodge home each point persuasively. The cartoon style makes YOUR SAFETY NEWS as familiar and welcome as the picture packed Sunday supplement.

WINS READERS WITH A FOLKSY APPROACH

Keeping the contents folksy, adding the light note of humor, gets your message across with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of indifference.

RIVETS ATTENTION WITH VIVID COLOR

Generous use of color sparks the message, and adds impact to the contents of YOUR SAFETY NEWS. Each issue is as alive as any news-stand favorite.

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YOUR SAFETY NEWS may be ordered with either the standard imprint or with your Own Special Imprint. The standard imprint reads "PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER."

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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- **Broad-bearing Nosepads give comfortable distribution of glass weight**

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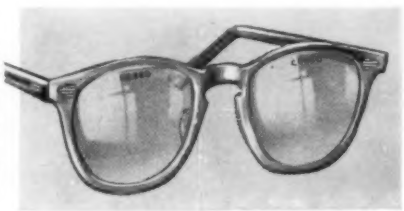
• If you desire, these new CESCO All-Plastic Safety Glasses can be ordered without side shields. They offer the same outstanding features as the glasses described above. Three sizes: **No. 375F** (44 x 37mm), **No. 376F** (46 x 39mm), **No. 377F** (48 x 41mm)



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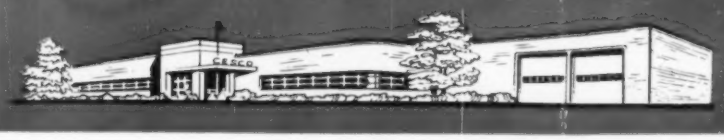

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First aid for throat irritations . . .

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